Hydria Ægina Pirœus Salamis



Pnyx of Hymettus Acropolis Theseum Academia Colonus

GENERAL VIEW OF ÆGINA AND ATHENS FROM PATISSIA.

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THE TEMPLES

OF

JUPITER PANHELLENIUS

AT ÆGINA,

AND OF

APOLLO EPICURIUS

AT BASSÆ NEAR PHIGALEIA

IN ARCADIA.

BY

C. R. COCKERELL,

PROFESSOR OF ARCHITECTURE IN THE ROYAL ACADEMY, MEMBER OF THE INSTITUTE OF BRITISH ARCHITECTS, LONDON; HONORARY DOCTOR OF CIVIL LAW, OXFORD;
MEMBER OF THE DILETTANTI SOCIETY; ASSOCIATED MEMBER OF THE INSTITUTE OF FRANCE, AND CHEVALIER OF THE LEGION OF HONOUR;
MEMBER OF MERIT OF THE ACADEMY OF ST. LUKE IN ROME; FOREIGN MEMBER OF THE ACADEMIES OF MUNICH,
COPENHAGEN, GENEVA, ETC., ETC., ETC.

TO WHICH IS ADDED

A MEMOIR OF THE SYSTEMS OF PROPORTION EMPLOYED IN THE ORIGINAL DESIGN OF THESE STRUCTURES.

BY

WILLIAM WATKISS LLOYD.

LONDON:
JOHN WEALE, 59, HIGH HOLBORN.
1860.

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TO

THE MEMORY OF

WILLIAM·R·HAMILTON·ESQ·F·R·S·



THIS·WORK·ON·THE·ANTIQUITIES

OF

ÆGINA

IS·RESPECTFULLY·DEDICATED.

BY·HIS·MOST·OBLIGED·AND·HUMBLE·SERVANT.

CHA^{S}·ROB^{T}·COCKERELL.

Published by John Weale, 59, High Holborn.

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ÆGINA.

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ERRATA.

Page	13	16 lines from the top,		*for* “ Pl. XI.,” *read* “ Pl. XII.”
„	19	24	„	bottom, *for* “ Pl. XIII.,” *read* “ Pl. XII.”
„	19	22	„	bottom, *for* “ Vignette at the head of Chapter III.” *read* “ Plate I.”
„	23	11	„	top, *for* “ 45 . 1 . 9,” *read* “ 44 . 11 . 9 ”—and *for* “ 94 . 2 . 40,” *read* “ 94 . 0 . 40.”
„	25	11	„	top, *for* “ Pl. V. *bis*.,” *read* “ Pl. VI.”
„	26	18	„	bottom, *for* “ 2′ 8″ ·25,” *read* “ 2 . 6 . 25.”
„	31	8	„	top, *for* “ fig. 3,” *read* “ fig. 4.”
„	36	14	„	top, *for* “ Pl. XIII.,” *read* “ Pl. XIV.”
„	36	13	„	bottom, *for* “ Pl. XIV.,” *read* “ Pl. XV.”
„	39	last line,		*for* “ Pl. XV.,” *read* “ Pl. XVI.”
„	41	10 lines from the top,		*for* “ Pl. XVIII.,” *read* “ Pl. XVII.”

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BARON HALLER OF HALLERSTEIN.

PREFACE.

The fortunate researches into the remains of the Temples of Jupiter Panhellenius at Ægina, and of Apollo Epicurius in Arcadia, undertaken during the years 1811 and 1812, excited the greatest interest amongst the archæologists of Europe. The former, as revealing a specimen of the archaic architecture of Greece, together with abundant examples of that school of sculpture, so highly appreciated by classic writers; and which, however desired, had never yet been distinctly recognised in the monuments of that art preserved to our times. The latter, together with the architecture of Ictinus, the fellow labourer with Phidias in the Parthenon, as discovering to us a sculptured frieze, 102 feet long, of the school of Athens, and of the most flourishing period of Grecian art.

Two publications, treating on these important monuments, amongst others of less pretension, were gladly hailed by the public in 1830 and 1833; the first by Professor T. L. Donaldson, on the temple of Apollo (*Antiquities of Athens and other Places in Greece*), and the second by the French Commission (*Expédition scientifique de Morée*), conducted by Monsieur Blouet. But neither of these works (collected some years after the excavations) were attended with the advantages which the leisurely investigations of the original excavators naturally possessed; and Monsieur Blouet very candidly admits his obligations to the Editor for an article upon the marbles of Ægina, published in the *Quarterly Journal of Science, Literature, and the Arts*, in 1819.

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The more authentic record, therefore, of these investigations, by those who participated in them, has long been a desideratum, and, it must be confessed, has been too long promised; but the performance has been delayed, first, from the unfortunate death of the accomplished Baron Haller, who proposed to join the Editor in this country for the purpose; and, secondly, from the constant engagement of the latter in an arduous profession; unassisted by the leisure and the funds necessary to prosecute a work of such expense and importance. But the "Exemplaria Græca" are of all time, and ever acceptable, and the Editor is happy in having accomplished, however tardily and imperfectly, a debt due equally to the public and to his worthy associates in these enterprises.

He rejoices on this occasion to express his great obligations to the late William Hamilton, Esq., formerly Under Secretary of State for Foreign Affairs, a friend removed from us while these sheets were passing through the press, and to whose zeal and influence in charging him with despatches for our Embassy at Constantinople in 1810, these interesting discoveries are due. He is happy in presenting the above Portrait in memory of his colleague in this work, the amiable and accomplished Baron Haller. He begs also to express his acknowledgments to those gentlemen who have subscribed in aid of this publication: and especially to W. W. Lloyd, Esq., for his constant encouragement and for the learned commentary which he has been pleased to add to the present volume; and finally to Mr. E. Walford, M.A., of Balliol College, Oxford, for his superintendence of the labours of the press.

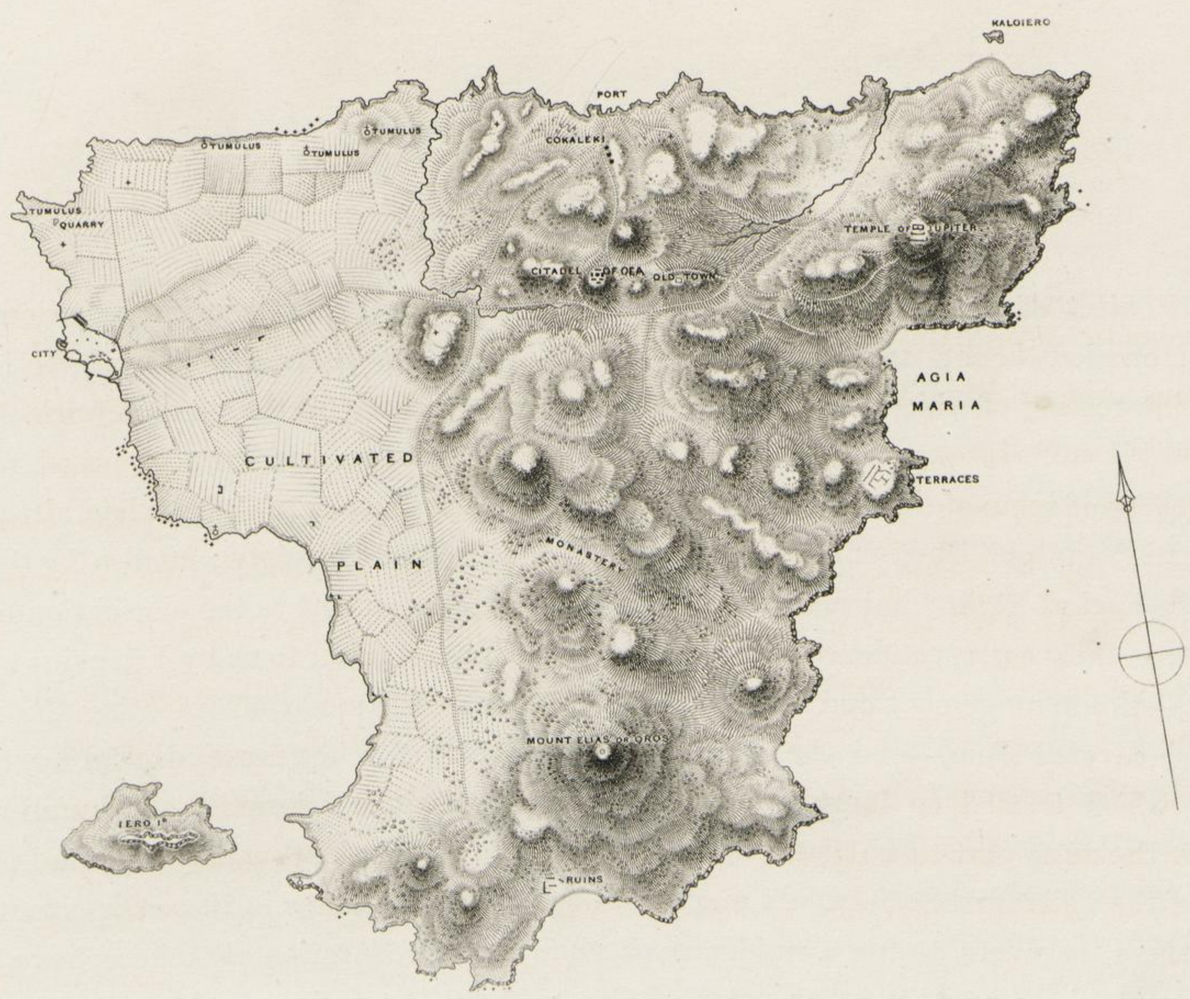
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MAP OF THE ISLAND OF ÆGINA.

INTRODUCTION.

As the traveller looks over the plain of Athens from the foot of Mount Brilessus, he sees spread out before him the whole extent of the island of Ægina, so happily termed by Pericles more than 2000 years ago "the eye-sore of the Piræus."* The western portion of the island is a plain, at the extremity of which lies the port and city of Ægina, or rather, we should say, what was the city in the days of its commercial and artistic prosperity. In the centre, or nearly so, rises the ancient citadel of Œa, originally, perhaps, the chief place of the island, when safety required an inland situation for its capital, and when the commerce and naval power which drew a population to the maritime site either had not commenced, or were in their infancy.† To the East rises the hilly portion of the island, terminating in what was called Mount Panhellenius, under the highest point of which, and on the summit of one of whose spurs, stands the temple of Zeus Panhellenius. Theophrastus ‡ tells us that this mountain served as a barometer to Athens, for "when the clouds assemble on the mountain above the temple, rain is to be expected." Further to the eastward are to be descried Hydrea and Cape Scyllæum, and the blue waters of the Saronic gulf as they open out to the Archipelago in the distance, and at the extreme left of the picture, though nearer in the foreground, rises Mount Hymettus. On the right, in the far west, are seen Trœzene, Epidaurus, and Mount Arachnæus, whilst the middle distance is occupied by Athens, the Acropolis, the Piræus, the "Long Walls," the Groves of Academe, the classic deme of Colonus, and the shores of "unconquered Salamis."

It was in the autumn of the year 1810 that a happy chance brought together in Athens some artists and men of letters from various countries who were engaged in the common pursuit of Grecian antiquities. They were Lord Byron; the Chevalier Bronstedt from Copenhagen; Mr. Koes from Denmark, who fell a victim to the ardour of his pursuits in that country, dying at Zanté, in 1812; the Baron Haller,§ from Nuremberg (the most intimate friend and associate of the author in the researches detailed in these pages); the Baron Stackelberg; Mr. Linckh, of Wurtemberg, and the late Mr. Foster, architect, of Liverpool.‖ A meeting so opportune could not

* Λήμη τοῦ Πειραιέως. An expression of invective, which has been variously attributed to Pericles and to Democles. See Arist. Rhet. iii. 21; Athenæus, iii. 55.

† It is on this supposition that Leake suggests that Œa occupied the site of *Paléa-Khora*, which has served as the capital in modern times under similar circumstances. (Leake's "Morea," vol. ii. p. 439.) Herodotus confirms this hypothesis (as observed by Leake) in book v. ch. 83, where he speaks of Æa as a place twenty stadia distant from the city [of Ægina], and lying inland—*ἐς τὴν μεσόγαιαν.*

‡ Ἤν ἐν Αἰγίνῃ καὶ ἐπὶ τοῦ Διὸς τοῦ Ἑλλανίου νεφέλη καθίζηται, ὡς τὰ πολλὰ ὕδωρ γίγνεται. Theophr. de Signis Pluviarum.

§ He was architect to the late King of Bavaria. He died in Thessaly of fever, brought on by his unremitting labours in the cause of art and science, in 1816.

‖ It may not be out of place to mention here, that they were much encouraged by several of the elder residents at Athens; amongst others by M. Fauvel, the French consul, Don Tito Lusieri, agent and painter to Lord Elgin, and Herr Gropius, painter of Berlin.

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fail to promote the object of their travels by stimulating them mutually in their investigation of the venerable remains which surrounded them ; and it ultimately led to important discoveries in architecture and sculpture, some of the most interesting of which are described more or less perfectly in the present work.

The great outlines of some of the chief monuments in and about the city of Athens had already been faithfully delineated by Stuart,* and published under the auspices of the Dilettanti Society ; as also by the architects in the employ of the late Earl of Elgin ; but many details of the greatest moment to the elucidation of the architecture of Grecian Temples,—their correspondence with the principles handed down to us by Vitruvius as derived from the old Hellenic race,—the arrangement and order of their interiors,—the mode of executing the masonry, the roof, and the tiles which covered them,—and the ornamental accessories of sculpture and painting, their acroteria and their pediments, which formed so large a proportion of the merit and interest of Grecian works of art—all these remained for the most part to be discovered and explained ; though some may be found placed on record in the publications of the Dilettanti Society. It may be added, that the success in these respects which attended the first inquiries of these travellers during a residence of some months' duration at Athens, gave them assurance of gathering hereafter a rich harvest in other parts of Greece, by more patient and persevering investigations of many sites left hitherto unexplored and scarcely recognised, owing to the many privations and dangers which attended such labours, including sickness, death from exposure to malaria, and the attacks of a lawless population.†

Full of these bright anticipations, a party of four, consisting of Baron Haller, Messrs. Foster and Lynckh, and the author, determined, in April, 1811, to pay a lengthened visit to the island of Ægina, for the purpose of exploring the Temple of Zeus Panhellenius—a monument which, as they knew, from its reputed antiquity and its extraordinary preservation, presented to the antiquarian and the artist an object not inferior in interest to any edifice existing in Greece. Accordingly, having spent the evening with Lord Byron in pouring out libations in propitiation of his homeward voyage to England, to reap the rich harvest of fame which awaited his return, they left the Piræus just after midnight, and arrived at break of day under the Panhellenian Mount. Fortunately, even at that early season, they were enabled to bivouac without fear, owing to the settled fineness of the weather, and they found their accommodation completed by making use of the cave at the north-east angle of the platform on which the temple stands,—originally, perhaps, an oracular adytum or recess. The party, together with their servants (including a Turkish janissary by way of guard), were sufficiently strong to defy the pirates who infested those seas in the nineteenth century of the Christian era with as much audacity and impunity as they showed in the days of Homer ; ‡ and accordingly they passed twenty days and nights upon the spot without molestation, under the agreeable excitement of the enterprise which they had undertaken. The neighbouring village, the modern capital of Ægina, furnished the provisions and the labourers necessary for the excavation. The mountain thyme afforded fuel, partridges were in abundance, and the shepherds provided the party with kids, which were roasted on wooden spits over a blazing fire, when the labours of the day were brought to a close. The unusual bustle of the little encampment soon increased ; and the good-humoured descendants of the Æacidæ proved at once their hospitality and their interest in our labours by the readiness with which they assisted us, lightening our toil with the rustic lyre, the song, and the dance—now, as in former days, the constant accompaniment of all combined operations in those countries.

Though a crop of barley was growing on the surface of the platform, still little vegetable earth had accumulated upon the ruins and fallen fragments of the Temple itself, owing to the fact that its foundation was almost entirely composed of the solid rock : and, consequently, no very arduous labour was entailed upon the

* The first volume of Stuart's "Athens" appeared in 1762, the second in 1787, the third in 1794, the fourth and last, in 1816.

† Of the seven travellers included above, three died in those countries, two suffered from pirates, and none escaped the usual consequences of malaria—such are the dangers attendant on those expeditions. An unfortunate adventure of the Baron Stackelberg may be narrated here, as illustrative of these dangers, and also of the character of the lamented Baron Haller. After a serious illness at Athens, on his road back to Vienna through Salonica, the former had been taken prisoner by some Albanian pirates, who demanded 60,000 piastres (about 2400*l.*) as his ransom, under the usual penalty of the loss of a limb, nose, ear, &c., at each successive repetition of the demand, and, finally, of life itself. Although no more than 12,000 piastres could be raised for this purpose, Baron Haller proceeded to the appointed *rendezvous* for the negotiation. He found his friend in an alarming state, owing to a feverish relapse, and to the privations which he had been suffering at the hands of those brutal outlaws. Under these circumstances, and with a full knowledge that the sum provided was quite unequal to the demands of these freebooters, and that no means of increasing it were within reach, and that his friend Stackelberg possibly might not survive the want of common care and of medical aid in event of his detention being prolonged, Haller (like a second Pylades) proposed to the pirates to remain in their hands as a hostage until their prisoner might recover. It may be interesting to know, that a sufficient ransom was eventually paid, and that Baron Stackelberg recovered.

‡ See Thucydides, book i. ch. 5.

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excavators, who were shortly rewarded by finding themselves in complete possession of every object of their architectural researches. In a few days they were in possession of every detail which they desired, from the stylobate to the conformation of the tiles, so as to produce the entire restoration of the Temple as set forth in the accompanying plates. It may be added, that the perfect state of the fragments confirmed the hypothesis already formed by them from the less perfect remains of Athens, and proved to their infinite satisfaction that the principles of construction as exhibited in Ægina were common to the other states of Greece during the best period of Hellenic art.

In the midst of these investigations, their attention was arrested by a new and unexpected incident; one of the excavators struck upon a fragment of Parian marble, which on closer inspection proved to be the head of a warrior, enclosed in a casque, and perfect in every feature. It lay with the face turned upwards; and as soon as the removal of the earth revealed its proportions to the eye, all felt that a new interest was given to their search: other fragments quickly followed; and great indeed was the astonishment of the entire party, when, on clearing away the fallen portions of the Tympanum and Cornice of the eastern and western Pediments, no less than seventeen statues, and the fragments of at least ten more, were successively brought into the light of day from the place in which they had lain concealed for fifteen, if not for twenty, centuries. It seemed, moreover, almost incredible that such precious relics and such magnificent specimens of the Æginetan School of Art should have been suffered to lie hid for so long an interval of time under so thin and slight a covering, undisturbed by the curiosity of the antiquarian, the cupidity of Roman or Venetian conquerors, or the temptation under which the native population lay from century to century to turn them to some profitable account.

It could scarcely perhaps be expected that the islanders would quietly resign their possession of these treasures, however little able they might be to appreciate their worth; and, indeed, their transport from Ægina was not accomplished without much address, and in spite of many difficulties. What the Archons chiefly feared was the vengeance of the Capitan Pasha, to whom they were personally responsible, and whose appanage Ægina was at that time, in common with all the islands of the Archipelago. But their apprehensions were at length quieted with a present of money; and the precious treasures were transported to Athens in the first instance. The Turkish authorities at Athens, however, were no less to be feared than those of Ægina; and it was accordingly resolved, for their better security, to transport them to Zanté. Owing to the marbles being much subdivided by fracture, they were carried on the backs of mules without any very great difficulty, across Megaris to Porto Germano, where a boat was in readiness to receive them. From Zanté they were again removed to Malta, and forwarded thence to Rome; ultimately, as is well known, they were deposited at Munich, in the museum of the King of Bavaria, one of the most distinguished patrons of the fine arts whom modern times have produced.

With reference to the final destination of these marbles, it may be permitted here to add a few words in justification of the two English gentlemen who took an active part in their discovery, and whose zeal for the interests of their own country might otherwise seem to lie under an imputation which, in reality, is by no means merited. On the first discovery of the marbles, information was sent to the British Ambassador at the Porte, and also to the British government at home through Mr. Hamilton. Shortly afterwards, two English travellers of distinction—the late Messrs. Gally Knight and Fazakerly—who happened to arrive at Athens, offered a sum of £2000 to the two German co-proprietors to relinquish their shares, engaging together with the English proprietors—Messrs. Foster and Cockerell—to present the whole collection to the British Museum. These terms, however, were declined on the part of Messrs. Haller and Lynckh, from an equally honourable desire to secure the statues for their own countrymen. With both parties thus situated, and both equally anxious to strain every nerve for their respective countries, it is clear that no other mode of solving the difficulty remained, except that of offering them for public sale. Advertisements were accordingly inserted in the *Gazette* of every country in Europe, announcing that they would be offered to public competition in the following year at Zanté; and Mr. Gropius, who was permanently established as a merchant at Athens, was appointed by common consent to act as agent in the business, in the absence of the several parties directly interested. In the midst of the political anxieties of the period, the attention of the British government was directed to the subject through the good offices of Mr. Hamilton, at whose instance H. M. S. Paulina, Brig of War, was sent out under Captain Perceval, with a most liberal offer for the immediate purchase and transport of the treasures. The engagement already entered into with the public, and the zeal of the German co-proprietors, unfortunately combined to render it impossible to accept the offer; but still, under the immediate apprehension of an attack by the French upon the island of Zanté, the proprietors were induced to consent to the removal of the marbles to Malta, as offering an asylum of greater security. Captain Perceval, on the part of the British government, undertook this duty. But though the marbles were

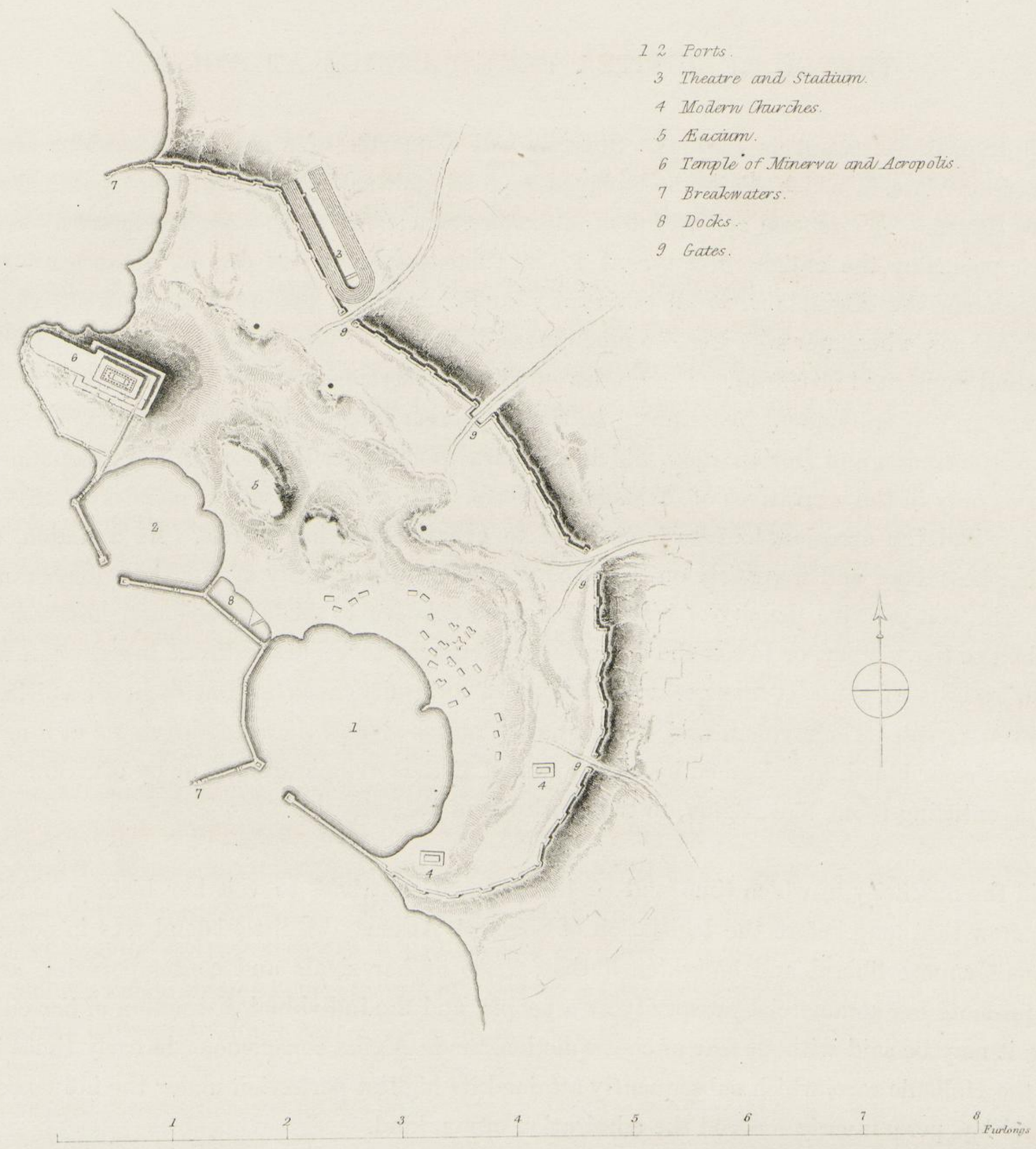
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deposited at Malta, no change in the previous arrangements was made by the agent, Mr. Gropius, to whose hands the matter had been confided by the principals, who by this time had separated and were following their respective avocations, the one in Sicily and the other at Smyrna. The home authorities, bent earnestly on the acquisition of the treasures for the British Museum, despatched Mr. Taylor Combe, the keeper of the antiquities of that institution, to bid on their behalf, not doubting that the sale would be held at Malta, as indeed was most natural, seeing that it was the place of their deposit. Meanwhile the sale took place as originally intended, at Zanté, in the absence of the treasures which were to be submitted to the hammer; and the statues were purchased, through M. Wagner, who had been despatched from Rome for that purpose, for H. R. H. the Crown Prince of Bavaria.

The disappointment of the English parties on learning the result may be more easily conceived than expressed in words. On re-assembling, they found themselves committed through their legally appointed agent, Mr. Gropius, to support a sale effected much to their own disadvantage, and bound to assert, at the risk of much odium, the legal right of the Prince to the purchase. After some discussion and correspondence between the respective governments, that right was at length confirmed, and the statues were given up to the Prince, by whom they were finally deposited in the Museum at Munich.

Thus, though defeated in their long cherished object of securing these works of ancient art for their own country, the author feels that he and his deceased coadjutor, Mr. Foster, were unconscious of having neglected any means of obtaining them consistent with propriety; and he has always the consolation of knowing that they have been placed in an asylum where they have been appreciated by the entire European public, and in the hands of a Prince who is surpassed by none in his enlightened patronage of the fine arts, and especially of the master-pieces of Grecian skill, in a country renowned for its devotion to such glorious and elevating studies.

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PLAN OF THE CITY OF ÆGINA AT THE PORT.

CHAPTER I.*

"Why need we repeat," exclaims Strabo,† "that Ægina is one of the most celebrated of Grecian islands, as the native country of Æacus and the Æacidæ, and an island which once enjoyed the dominion of the sea, and contended even against Athens herself for the prize of superior prowess at the battle of Salamis?"

Few remarks could be more just; and most fully is the admiration of the geographer justified by the scattered evidences of history regarding Ægina, whether we look to her spirit of commerce, to that political and artistic renown which gave her for a long period so disproportionate a pre-eminence both in peace and war among the early states of Greece, or to that religious influence which established in that island the habitation and worship of the God of Universal Greece, and thence derived a race of heroes, who were esteemed as demi-gods, as household Penates, and as patrons of patriotic and military excellence, not only in Ægina, but in every part of Hellas.‡

But frequent as are the references to Ægina in the ancient writers, and full as they are of interest in all that concerns the useful and productive arts of life, we cannot but lament the absence of those full and connected records, which make us so intimately acquainted with the inner life of Athens and Sparta, and of other states of

* For much of the contents of this chapter the author is indebted to the learned and scholarlike work of C. Mueller, entitled "Æginetica," of which he has largely availed himself in prosecuting his historical enquiries respecting the history of Ægina.

† Strabo, book viii. ch. 6. 16.

‡ Herodotus, book v. ch. 89, states that, in obedience to the Delphic oracle, the Athenians erected a temple (τέμενος ἀπέδεξαν) to Æacus, in their own city.

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Greece. The reason of this want is obvious. Scarcely had a quarter of a century passed by after the closing scene of the Persian wars, in which Ægina had played so distinguished a part, when her political existence may be said to have ceased. The general cultivation of literature, which in other states had followed on the collection of the Homeric poems by the enlightened tyrant Pisistratus, took root less deeply, or at least flourished less conspicuously, among the Æginetans, as an essentially commercial and manufacturing people, than among the inhabitants of Athens, whose pursuits were so much more diversified. The fact is, that her prosperity had fallen into a sudden and unmerited obscurity. The glories of Ægina, therefore, are for the most part unrecorded alike by contemporary and by subsequent historians. It should be remembered, too, that the all-engrossing history of that struggle of the Ionian and Dorian races which is known to us under the name of the Peloponnesian war, has come down to us only in the narratives of Athenian writers, who were the bitter enemies of Ægina, and who, therefore, if they had the occasion, had no inclination to expatiate on her merits. As a nation, too, who had already seen her best days, and was fairly on the decline, Ægina was scarcely of sufficient importance to attract much notice. The comparative paucity of historical notices relative to Ægina need not, however, diminish the interest attached to her history, or lessen the important inferences to be drawn from them, when we reflect how scanty are the records of some of the greatest nations of antiquity, such as Carthage, Phœnicia, the cities of Etruria, and even Egypt. Their rulers and heroes have flourished and decayed, leaving but a name too often stained with avarice or blood, unredeemed by prizes gained at the Olympic games, or by contributions to the fine and useful arts, entitling them, like Ægina, to the gratitude of posterity.

Still, amid the obscurity in which time and prejudice have contrived to veil her history, enough has been discovered to show that long before the legislation of Solon at Athens, this little island was in possession of laws and institutions far more liberal and enlightened than those of her rivals and contemporaries, and singularly calculated to promote her commercial prosperity as a people, and the individual distinction of her citizens. These circumstances, it may be said without fear of contradiction, made Ægina conspicuous in early times in developing the genius of the Hellenic race, which subsequently attained its highest perfection under the influence of Athenian ascendancy, and has permanently secured the admiration of mankind.

It is not, however, intended to dilate on the history of Ægina, or to give more than such a short notice of its external features and of its character in past ages, as will be necessary to illustrate a work on its antiquities. The sympathy which an Englishman cannot but feel with Ægina, equally conspicuous in the arts of peace and war, and in the Olympic games, and the busy mart of Grecian industry, induces us to cite here some of the more important events of her history, and to give such a brief notice of the external features of the island as may enable the reader to follow the author through these pages. The circumference of the island, according to Strabo, is 180 stadia (about 22½ miles). He adds, "The city, which bears the same name as the island itself, is on the south-west side.* Ægina is surrounded by Attica, Megaris, and the parts of Peloponnesus towards Epidaurus: it lies about 100 stadia distant from each; its eastern and western sides are washed by the Cretan and Myrtoan seas. There are many islands which lie between it and the continent, but towards the open sea, Belbina only. Its land possesses a deep soil, but strong upon the surface, particularly in the plains: hence it is generally bare of trees, though tolerably productive of barley. It was originally called Ænone." Pausanias† observes that "the numerous rocks and shallows by which Ægina is surrounded, rendered it difficult and hazardous of approach;" and so much was this the case, that these rocks and shallows were ascribed by the poetic and patriotic feelings of the natives to the hero Æacus, who devised them as a protection against the assaults of pirates and other enemies. It may be observed that Colonel Leake, in his "Travels in the Morea,"‡ quotes the extract from Strabo given above, and adds that the ancient geographer "has described Ægina with his usual elegance of expression, and with an accuracy for which he is not so often remarkable." He adds, "Like the majority of the islands of the Ægean sea, Ægina preserves its ancient name unaltered.§ Its western half consists of a stony plain, well cultivated with corn. The remainder is mountainous, and may be divided into two parts—a very remarkable hill, now called Oros,‖ which occupies all the southern extremity, and the ridge of Panhellenium on the north-eastern side. Between the latter and the plain there are some narrow cultivated slopes, lying amidst a cluster of irregular hills." The accuracy of the description given by Strabo and by Leake is sufficiently

* This is scarcely true. The city of Ægina stood near the *north*-west of the island; but it had a *south*-western aspect, as will be seen by a reference to the map at the head of this chapter.

† Book ii. ch. 29.

‡ Vol. ii. 431 *et seqq.*

§ In pronunciation, Colonel Leake means; it is written Eghina.

‖ Τὸ Ὄρος, *scil.* the *mountain.*

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proved by the chart prefixed to this chapter, communicated to the author by the late Admiral Sir F. Beaufort, K.C.B., the well-known Hydrographer to the Admiralty ; it is from Captain Copeland's survey as respects the coast, but for the geography of the interior it is indebted to the hands of the late Sir William Gell.

No country exhibits more conspicuously than Ægina that disposition—so prevalent throughout the states of ancient Hellas—which leads their inhabitants to supply the obscurities of early history by poetic legends and fabulous traditions. Thus the birth of its earliest benefactor, Æacus, was attributed to an amour of Jupiter or Zeus with Ægina,* the daughter of Asopus,† from whom the island was called Ægina, instead of Ænone, as before. It was further said that at this time Ægina was uninhabited, and that Zeus changed the ants (μύρμηκες) of the island into men, the Myrmidones, over whom Æacus became king.‡ Hesiod asserts that Ægina was especially the seat of the Myrmidones ; and Theagenes, who wrote a history of Ægina (known to us only through the Scholiasts), states that they were so called from the fact of their living, like ants, in subterranean cavities.§

In a similar spirit Isocrates‖ remarks, "It is acknowledged that among the demigods, those sprung from Jove are the most noble, and that no one will deny the pre-eminence of Æacus among that race. For while in other families we find some superior and others inferior, one and all of the sons of Æacus attained the highest celebrity in his time. For Æacus, who is the reputed son of Jove, and the author of the race of Teucer, was so eminent, that when Hellas was afflicted with a drought accompanied by such a fatal pestilence that nothing could exceed the severity of the calamity, the magistrates of the several cities came to him as suppliants, in the belief that, partly by his relationship and partly by his personal piety, he could obtain from the Gods a remedy for the ills which they were suffering. His prayers were heard, and on the cessation of the disease, they built a temple to the god of all the Hellenes (Ζεὺς πανελλήνιος) on the very spot where he had stood to offer his intercessions. Hence Æacus attained the summit of glory as a benefactor while alive, and after death was invested with the highest honours by Pluto and Proserpine, and was called to preside with them over the infernal regions. His sons were Telamon and Peleus, the former of whom gained the highest distinction by his valour in the expedition against Laomedon ; while the latter was beloved by the Nereid Thetis on account of his bravery in the war which he conducted against the Centaurs and in many other engagements, and eventually obtained her in marriage. He thus became at once renowned and immortal, and he is the only mortal of whom antiquity relates that the gods themselves were present at his nuptials, and joined in his hymenæal song. They both had sons : Telamon had Ajax and Teucer ; but Peleus had Achilles, who evinced his distinguished merits by the greatest and clearest proofs. For it was not so much in their own cities or in the countries where they were bred that they became conspicuous, as in the expedition undertaken by the Greeks against the Barbarians, in which so many heroes were enlisted on either side, that scarcely a full-grown man remained at home. In this tremendous encounter Achilles was foremost in exploits of valour, and Ajax obtained the second place. Teucer, however, was worthy of his birth, and inferior to none of the other Greeks ; for having taken a strenuous part in the capture of Troy, he settled in Cyprus, where he built the town of Salamis, calling it by the name of his native island, where he left the dynasty now reigning there, and of whom Evagoras is the lineal descendant."

It is more than probable that, during the ages of which Homer speaks, when piracy was regarded as an honourable avocation among the islanders of the Ægean Sea, the advantageous position of Ægina added considerably to her political importance. At all events she contributed a large quota to the Trojan expedition, sending eighty ships¶ to the war as her contingent jointly with Trœzen, Tiryns, Epidaurus, Asine, and Hermione. She did not assume a commercial character until after the return of the Heraclidæ into the Peloponnesus : such, at all events, is a legitimate inference from the fact that Homer mentions as merchants only the Phœnicians, the Cretans, the Tyrrhenians, the Lemnians, the Taphians, and the Phæacians. Accordingly, her prowess, after the fashion of those early days, was chiefly confined to piracy.

But from the time when the passion for wealth, as Thucydides remarks, began to supersede the taste for piracy, the earliest notices of commercial enterprise among the states of Hellas are connected with Ægina. Thus

* A beautiful representation of the rape of Ægina is to be found in Hamilton's "Vases," vol. i. plate 26.

† A river of Bœotia, or (according to others) of Sicyon.

‡ Pausanias, book ii. ch. 29 ; comp. Apollod. iii. 12 ; and Ovid. Metam. vii. 472, 599.

§ The idea is also to be found in Æsch. Prom. v. 462 :

ὡς ἀήσυροι
μύρμηκες, ἄντρων ἐν δόμοις ἀνηλίοις.

‖ Encomium in Evag.

¶ Compare Homer. Il. B. 559—568.

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we are informed by Pausanias,* that when Pompus was King of Arcadia, about 870 B.C., the Æginetans brought their merchandise to Cyllene,† the port of Elis, and then placed it on the backs of mules for transport into Arcadia. He adds, that Pompus was so pleased with his connection with these traders, that he named his own son Æginetus. The island became subject, about 748 B.C., to Pheidon, King of Argos, under whose dynasty tne Æginetans began to take the lead in commercial transactions on a larger scale; so much so that they seem to have been the first to open up and establish a familiar intercourse with the polished countries of Ionia, Syria, and Egypt, as well as with the west of Greece, and became carriers of corn from Pontus,—a lucrative branch of trade subsequently engrossed by the Athenians. It appears, too, that they had planted a colony in Pontus, and others at Cydonia in Crete, and even in Umbria.‡ So frequent had been their intercourse with Egypt, that about 563 B.C., Amasis, king of that country, permitted them to erect for themselves at Naucratis a temple in honour of Zeus Panhellenius—a singular privilege, it would seem, to the Æginetan merchants and traders, and one which was accorded only to the Samians and the Milesians besides,§ whilst the Greeks of Asia Minor, Ionians, Dorians, and Æolians, were obliged to content themselves with a temple common to them all. These facts attest a traffic long previously carried on not only with those coasts, but probably also with Sidon and Tyre, "whose antiquity was of ancient days, and whose merchants were princes," ‖ and show that Ægina contributed her share to the commercial renown enjoyed by "the Isles, the abundance of the seas," so frequently referred to in the writings of the prophet Isaiah.

It appears from the express declaration of ancient writers, that for some years previous to 491 B.C., Ægina bore the enviable and significant title of θαλασσοκράτωρ,¶ a term which is also applied to its inhabitants by Herodotus, who states that with the increase of their power came the desire of political independence, and that they not only renounced the authority of the Epidaurians ** to whom they had previously been subject, but were able to carry on a system of petty annoyance against the coasts of that country on account of their maritime eminence.†† The same fact is incidentally implied in a passage in Thucydides,‡‡ where immediately before the outbreak of the Peloponnesian War the Corinthian ambassadors remind the Athenians that their mother city had done Athens a good service in former days, having supplied her with twenty armed ships in their war against Ægina. Further, at the battle of Salamis (480 B.C.), though Ægina contributed only thirty ships, these, as Herodotus §§ tells us, were but a detachment of her fleet, consisting of the best sailers, whilst she had a further force in reserve specially employed in the defence of her own coasts, which, unlike those of Attica, were not then in possession of the enemy. It is scarcely necessary to observe that the Æginetan fleet must have been even more numerous than appears by these notices. A sufficient proof, if needed, may be found in the assertion of Herodotus,‖‖ that Themistocles persuaded the Athenians to fit out for the expedition against Ægina a fleet of no less than 200 sail; the substance of which is confirmed by Plutarch,¶¶ who relates that the Æginetans lost 70 ships in a single engagement.

It was Themistocles who first pointed out to the Athenians the necessity of increasing their navy, and of securing the empire of the sea if they would obtain the supremacy of Greece; and their growth in this respect dates from the period of the Persian war, in which they took so leading a part. The subsequent establishment of the tax levied on her island allies, under the name of Φόρος, combined with her dexterous management of the

* Arcad. ch. v.

† It was obvious that Pompus was a considerable gainer by this traffic, since in exchange for Æginetan merchandise he was able to export the produce of his own country. In illustration of this remark we may be pardoned for quoting the testimony of Colonel Leake, who writes, "The first question the Proëstos asks me is, why the Sclavonians, in their Adriatic ships, do not come as usual to take away their cheese; and he complains of their misery in consequence." Leake's "Morea," vol. iii. 115.

‡ Strabo, book viii. ch. 6. 16.

§ Herod. book ii. ch. 178: Χωρὶς δὲ Αἰγινῆται ἐπ' ἑωύτων ἱδρύσαντο τέμενος Διός· καὶ ἄλλο Σάμιοι Ἥρης, καὶ Μιλήσιοι Ἀπόλλωνος.

‖ Isaiah, xxiii. 8.

¶ Chron. Euseb. ad annum. ex. Ed. Vall.; comp. Diod. xi. 18. 78; Cic. de Off. iii. 11.

** "It seems to have been as a dependency of Epidaurus that Ægina fell under the dominion of the Argive Pheidon. After recovering her own independence, Epidaurus still continued mistress of the island. Whether she had any subjects on the mainland standing on the same footing, we are not expressly informed. Ægina was rapidly outgrowing the mother-country, and was engaged in a flourishing commerce, strong in an enterprising and industrious population, enriched and adorned by the arts of peace, and skilled in those of war. The separation which after took place was embittered by mutual resentment; and the Æginetans, whose navy soon became the most powerful in Greece, retaliated on Epidaurus for the degradation they had suffered by a series of insults."—*Thirlwall's History of Greece*, vol. i. p. 474 (8vo edition).

†† Herod. book v. ch. 83; compare, ch. 85, δηλέοντο αὐτοῦς ἅτε δὴ θαλασσοκράτορες ἔοντες.

‡‡ Book i. ch. 41.

§§ Book viii. ch. 46.

‖‖ Book vii. ch. 144. He adds, that the ships were never used for their intended purpose, but that they proved the preservation of Hellas, by forcing the Athenians to become a naval power. Compare Thucyd. book i. ch. 14.

¶¶ In Vitâ Pericl.

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resources thus placed at her command, placed Athens gradually in a position to engross the maritime power of Hellas in her own hands; and having gained this decided preponderance, it was not unnatural for her sons to seek to settle with their rival the long-standing account of mutual hatred and injury, and finally to remove "the eyesore of the Piræus."*

When such was the state of mutual feeling, an occasion was not long wanting. In 460 B.C., the Athenians having defeated the Æginetans in a naval engagement, laid siege to their principal town, which, after a long defence, surrendered in 456 B.C. The Æginetans in consequence were compelled to dismantle their fortifications, destroy their walls, deliver up their ships of war, and pay an annual tribute to their conquerors.† An effectual check was thus put to the political importance of the island; but the humiliation of their ancient enemies did not satisfy the Athenians, who feared the proximity of such industrious, and thrifty, and—we can scarcely doubt—such discontented subjects. Accordingly, in the very first year of the Peloponnesian war (which the Æginetans were accused of having done much to foment), they were made to feel the first and most fatal effects of its fury, marked by all those atrocities of which the hereditary hate of Dorian and Ionian, when quickened into activity by any immediate cause of strife, so often gave an example in the annals of the various states of Greece. The conquerors expelled the whole population, and cut off the thumbs of the right hands of the males,‡ to prevent them from bearing arms against Athens. This done, they divided the island among Athenian settlers.

Ægina never recovered this fatal blow. The exiles were settled by the Lacedæmonians at Thyrea, on the confines of Argolis, as a barrier against the encroachments of Argos in the direction of Laconia. But even thither they were followed by the unrelenting hatred of the Athenians, who five years after their expulsion from Ægina (426 B.C.), made a descent upon the Peloponnesian coast, during which they pillaged and burned their new settlement, and carried off a large portion of the inhabitants, whom they put to death.

The survivors, who had taken refuge in the various cities of Greece, were collected and restored to their native island by Lysander, after the battle of Ægos-potami, but as a people they never recovered their former state of prosperity.§ Their ancient enmity towards Athens was then renewed, with varying success; but deprived of the adventitious superiority which they had formerly derived from their commercial resources, they sank into comparative insignificance, and but little mention of them subsequently occurs in history. On the fall of Corinth, Ægina passed, with the rest of Hellas, under the Roman yoke. At the termination of the Macedonian war (190 B.C.), the island of Ægina was bestowed by the Romans on Attalus King of Pergamus; and Sulpitius, in his celebrated letter to Cicero,‖ enumerates Ægina among the chief instances of fallen greatness. Though Ægina was subjected to the Athenians by Marc Antony, about the year 35 B.C., still the account of that island and its dependencies, as given to us by Strabo, describes its political condition as by no means unimportant even so recently as the commencement of the Christian era.

That an island only twenty-two miles in circumference, and which might almost have been enclosed within the Long Walls surrounding the capital of her rival Athens,¶ should have occupied so conspicuous a rank among the states of ancient Greece, is a phenomenon of which we meet with examples of not unfrequent occurrence in ancient and in modern times. Situated in the middle of the Saronic Gulf, and at a short and nearly equal distance from the continent on each side, Ægina would naturally become an asylum for those who wished to escape from the tyranny or the revolutions of surrounding countries. From the very first she was taught by necessity to depend for existence on her maritime intercourse with other nations. "The very poverty of her soil," says Eustathius emphatically, "made Ægina illustrious." Her advantageous position with respect to commerce more than compensated for the diminutiveness of her territories, which often proved a subject of jest among her rivals. Thus Socrates, twitting Alcibiades on his pride of ancestry, which he boasted to be lineally derived from Ajax, addresses him in the following terms: "If, in order to do honour to your ancestors, you were obliged to show to Artaxerxes the native land of Eurysaces, or that of Æacus, which is more remote, how he would laugh, were you to point out to him two little islands no bigger than your hand."**

* For a further account of the Island of Ægina, and its history, the reader may refer to Grote's History of Greece, i. 252; iv. 230-2, 426-7; v. 65 *et seq.*, 149, 200, 438, 450; vi. 180; and ix. 516-21.

† Thucydides, i. 105, 108.

‡ Ælian, Var. Hist. xi. 9; Val. Max. ix. 2; Cic. de Officiis, iii. 11.

§ Thucyd. ii. 27; Plut. in Vit. Pericl. 34; Xenoph. Hell. ii. 2; Strabo, 375.

‖ Cic. ad. Fam. iv. 5.

¶ The Long Walls were nineteen English miles in length, including of course the Piræus. See Leake's Topography of Athens, sect. x. It may be added, that the walls of Carthage are said to have been only twenty-three miles in circumference.

** Plato. Alcib., i. 121 *β*.

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The ascendancy of Ægina, however, in her palmy days, could not be disputed; and the activity of her commerce was at once the cause and effect of laws and institutions which long and successfully maintained it, and which in themselves were no less remarkable than the high order of genius of which she was so productive.

The words—

Τὰ πρῶτ' ἀρίστους παῖδας Αἴγιν' ἐκτρέφει,

passed into a proverb,* perhaps the oftener repeated as the island lost her pre-eminence.

Commercial activity, the source of her great prosperity and prowess, must have presented in the busy mart of Ægina a model from which the legislators of Greece might well have derived their best practical lessons. We read that Draco, on finding his scheme of legislation rejected by the Athenians, retired to Ægina. It is probable, therefore, that he was already acquainted with the character of the island as a place where he would be likely to find respect or sympathy, or both. That he was already known to its inhabitants is proved by the fact related by Meursius, that on his first appearance in the theatre he was nearly overwhelmed by the populace throwing over him their cloaks and caps to do him honour. It is obvious to remark that the severity of the laws of Draco, suited as they are to the genius of a commercial rather than an agricultural people, shows the source from which he drew his examples. Nor can we doubt that Solon consulted the same authority, since we find the Athenians closely following in the steps of their Æginetan rivals, rapidly usurping their dominion of the sea, their commercial activity, and their taste for manufactures. Of the latter quality we need no stronger proof than is afforded by the remarkable law of Solon, which gave the right of citizenship to manufacturers settling in Athens—a law which shows not only the eagerness with which Athens grasped at the advantages long possessed by Ægina, but the craftiness with which her people turned against their ancient rival the most formidable part of her prosperity. Pindar too, no bad authority on such a matter, praises her equal laws, which induced strangers from every country to take up their residence at Ægina, as "the stranger-loving Dorian isle,"† the "dear land of the stranger,"‡ "the cultivator of justice,"§ and "the city of good laws,"‖ "where Themis, the Saviour, the counsellor of hospitable Jove, is worshipped."¶

Further proofs of the well-merited character of Ægina for hospitality are to be found in such facts as the following, which are casually recorded by historians. One of the phratries or tribes of the city of Ægina was named Euxenidæ. Herodotus tells us,** that after the battle of Platæa, a Coan lady, the mistress of one of the leaders of the host of Xerxes, on being taken prisoner by the victors, was sent to Ægina at her own request; and it is worthy of note that such Athenian citizens as Aristides†† and Demosthenes, when exiled from their own country, made Ægina their place of residence.

But perhaps the best of all evidence as to the merits of the Æginetans in these particulars is to be found in the mention made by Aristotle of the numerous, and almost fabulous, population of the island, when compared with its actual size. It is evident, however, that his statement that Ægina possessed 470,000‡‡ slaves, if the passage indeed be not corrupt, must be taken with some modification.§§ We would suggest that the statement of the Stagirite may after all have been borne out by facts, if we understand the term Ægina to include the continental possessions of that island, and the full extent of her commercial relations. Strabo‖‖ informs us that Ægina was a place in Epidauria as well as an island. It appears that she had possessions on the confines of Argolis and Cenchrea, as also at Mases and upon the island of Dia on the same coast. Added to these, a

* Eustathius ad Homer, Il. B. 562.

‡ φίλαν ξένων ἄρουραν. Nem. v. 8.

‖ τὰν εὔνομον πόλιν. Isthm. iv. 24.

** Book ix. 76.

† τὰν πολυξέναν Δώριδα νᾶσον. Nem. iii. 2.

§ τὰν δικαιόπολιν. Pyth. viii. 23.

¶ ἔνθα Σώτειρα, Διὸς ξένιον πάρεδρος, ἀσκεῖται Θέμις. Olymp. viii. 21.

†† Herod. viii. 79, 81.

‡‡ One MS. gives the total as 48,000 myriads; another is modest enough to fix it at 46,000.

§§ The number of slaves in ancient Greece was very great. According to a census made B.C. 309, there are said to have been in Attica 21,000 free citizens, 10,000 metœcs, and 400,000 slaves. (Ctesides ap. Athen. vi. 272 c.) According to this statement the slave population is so immense in proportion to the free, that some writers have rejected the account altogether (see Niebuhr, Hist. of Rome, ii. 69, *note* 143), whilst others have supposed a corruption in the number, and that for 400,000 we ought to read 40,000. (Hume, Essays, i. 443.) Bœckh, however (Public Econ. of Athens, i. 52), and Clinton (Fast. Hell. ii. 391), remark with justice, that in computing citizens and metœcs the sole object was to ascertain their political and military strength, and hence the census includes none but males of full age, while in enumerating the slaves, who were regarded as mere property, it would be necessary to compute all, both old and young, male and female. Bœckh gives the proportion of freemen to slaves in Attica as about 1 to 4; Clinton, as rather more than 3 to 1. It is clear, however, that the slave population in Attica far outnumbered the free. During the occupation of Decelea, more than 20,000 Athenian slaves effected their escape thither. (Thucyd. vii. 27.) According to Timæus, Corinth had 460,000; and, according to Aristotle, quoted by Athenæus (*ubi supra*), Ægina had 470,000.

‖‖ Book viii. ch. vi. 16.

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successful war with her commercial rivals, the Samians, had placed in the hands of Ægina Cydonia, the modern Canea, a city admirably situated for carrying on commerce with the coasts of Africa and Italy, as well as those of Hellas, and that this city was long in her possession. Strabo* also mentions that besides the above, she owned a colony on the confines of the Umbrians in Italy; and, finally, Stephanus Byzantius asserts that Ægina was the parent of a colony in the Euxine, conjectured to be Sinope, though the foundation of that city is sometimes attributed to the Milesians and the Cretans. If these dependencies and their respective populations be taken into account, the statement of Aristotle as given above, and which implies a free population of about five times that magnitude, may not after all be far from the truth.

The Æginetans, we have stated, were a busy commercial people. They not only acted as carriers of, and traders in, the raw materials for the rest of Greece, but they established various manufactories of their own, which at a very early date became the most esteemed in all Hellas. More particularly they carried on a large trade in articles of taste, such as statues and idols, bronzes, vases, trinkets, and hardware (ῥωπικά) with the people of Thasos, Pergamus, Tarentum, and Sicily: and so jealous were they of the manufacture of vases, that Herodotus tells us of a law amongst them forbidding the introduction of those of Athenian workmanship. They were also largely engaged in the woollen trade, as denoted by some coins of which specimens are still extant,† and gained great renown by their preparation of oils and unguents of a remarkable quality, though not accurately defined or described, and also by the peculiar excellence of their purple dye.

The insular and isolated situation of Ægina was singularly favourable to the acquisition of large families of slaves engaged in manufacture, since escape from the shores of Ægina to the continent was barely possible, and laws were enacted at once for their security and for the public safety, no vessel being allowed to approach or to quit the coast of the island by night. How greatly such regulations, if strictly enforced, must have benefited the Æginetans in point of numbers may be inferred from the fact that during the Peloponnesian war the Athenians lost no less than 20,000 slaves, in spite of an extensive police force which they maintained to keep watch over them. As the earliest merchants and manufacturers in Greece, the Æginetans were the first to experience the necessity of a metallic medium of exchange for those small articles which were proverbially termed Æginetan wares, and in which they were especially traders over and above the more important objects of commerce on a large scale. Accordingly we find that the earliest coinage according to Strabo,‡ on the authority of Ephorus, is attributed to Pheidon (about 722 B.C.), who is said to have set up a mint in Ægina. Grote,§ however, sees reasons for doubting the truth of this supposition; he writes, "There is every reason to conclude that what Pheidon did was done in Argos and nowhere else: his coinage and scale were the earliest known in Greece, and seem to have been known by his own name, 'The Pheidonian measures,' under which designation they were described by Aristotle in his account of the constitution of Argos (Pollux Onomast. x. 179). They probably did not come to bear the specific epithet of *Æginæan* until there was another scale in vogue, the *Euboic*, from which to distinguish them; and both epithets were probably derived, not from the place where the scale first originated, but from the people whose commercial activity tended to make them most generally known." Be this, however, as it may, it is certain that silver money throughout Greece for a long time bore the name of Æginetan.‖

The symbols engraved on Greek coinage have almost always a religious or mythic reference. Thus during the period of her prosperity and her empire of the seas, the symbol assumed by Ægina was the amphibious turtle, so abundant in the rivers and estuaries of Greece, indicative at once of her autochthonic origin alluded to above, and of her maritime occupations. But when she had fallen from her proud position, by policy or by compulsion, she discontinued the use of that symbol and adopted in its stead the emblem of the land tortoise.¶

It is remarkable that, notwithstanding the reverses to which Ægina was continually subject, and spite of the above change in the outward sign, her coinage retained for centuries its intrinsic worth and the Æginetan drachma served for several centuries as the standard of value all over the Dorian states of Hellas, and more

* Strabo, book viii. ch. vi. 16.

† They will be found in the "Ionian Antiquities," published by the Dilettanti Society, vol. ii.

‡ Eph. apud Strabonem, viii. 376; Bœckh, Metrol. Abschn. 7, 1; see also the Marmor Parium, Epoch 30.

§ Hist. of Greece, ii. 432.

‖ Herodotus (i. 94) states, that the Lydians were the first who traded in retail, and coined gold and silver money. To whomsoever the invention of coin is to be attributed, all agree as to the cause which gave birth to it, viz., the want of a medium of exchange for the small articles in which the retail-dealer (styled Αἰγινοπώλης) traded.

¶ The tortoise would seem to point to Sicyon, whose daughter is said to have married Æacus. The ram's head on other coins appears to bear allusion to Œa, and the parsley-leaf probably refers to the Sicilian Selinus. This opinion is adopted by Wachter, Arch. Mun. 38.

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especially at Lacedæmon. Thus we are told that Agis was fined 100,000 drachmas of Ægina ;* that the Spartan ransom for a prisoner was 200 Æginetan drachmas ; and that the tribute of the allies to the Spartans, as a substitute for the service of each soldier, was half an Æginetan drachma per diem.†

Knavery and luxury, the two vices which usually attend on commercial prosperity, were freely attributed to the Æginetans. The latter were reputed to be as keen in trade as the Cretans themselves ; so that "Κρὴς πρὸς Αἰγινήταν" was a proverb, according to Mitford, "nearly equivalent to our own expression, 'set a thief to catch a thief.'" The residence of Lais at Ægina, and the preference given to it as a residence by Aristippus,‡ the philosopher of the passing hour, are significant facts, and bear ample testimony to the luxury and wealth of its inhabitants. Her wealth and her luxury were in fact as proverbial as that of Corinth ; "there they played astragali with buns, and cakes ready baked fell from off the trees," says the jolly Cratinus in a fragment§ preserved to us by Athenæus.

But it was in far nobler objects of pursuit that Ægina was most remarkable. In the public games her sons were the best athletes of Greece, and by the cultivation of manly exercises they fitted themselves for the service and defence of their country. We have, indeed, the conclusive evidence of facts to prove that the institutions of Ægina were wonderfully calculated to call forth sentiments of emulation and honour ; for whereas Pindar, in the forty-five odes which have reached us, records only four victors in the games, who were natives of his paternal city of Thebes, only four from Agrigentum, and two only from Athens, and still fewer from the other cities whose praises he was invited to celebrate, we find that he sings of eleven who belonged to Ægina. Such, indeed, was their excellence in these contests, that the first victor ever honoured by a commemorative statue in the Altis of Olympia was an Æginetan,‖ and they constantly carried off the prizes from the Isthmian and Nemean games as well. It should be added that games, termed Heræa, in honour of Hera (Juno) and Phœbus, were held in their own island in the month of Delphinium, as also were others in honour of their ancestor, Æacus : a feast, too, in honour of Poseidon, was celebrated annually ; it is said to have lasted sixteen days, and to have concluded with a sacrifice to Venus.¶

The effects of the gymnastic contests upon the liberal arts, so remarkable in all the other states of Greece, were no less conspicuous in Ægina, though many of them, doubtless, are lost to our times by their remote antiquity. Pindar, who, as has been already stated, derived from thence his chief source of inspiration, mentions the names of three native Æginetan poets, Theandridas, Timocritus, and Euphanes, though none of their writings have come down to us. Plutarch also celebrates Polus, of Ægina, as the greatest tragedian of his day, in proof of the taste for dramatic exhibitions which prevailed among the inhabitants of that island. Moreover, if it were not foreign to our purpose, we could easily show that Ægina was equally celebrated for her skill in medicine and in other branches of science.

But the most important feature in the character of Ægina was her extraordinary pre-eminence in the fine arts, which made her school the most admired in Greece during nearly 300 years,** and secured to her artists precedence over those of all other countries during that period, the most important commissions in statuary, both for religious purposes and for those of a dedicatory or commemorative character, being confided almost exclusively

* Thucyd. v. 63 (according to the translation of Muller, Dorians, iii. 10).

† The coins of other Hellenic states, and especially those of Athens, were current together with the coinage of Ægina, but were generally of inferior value and weight. Athenæus (vi. 225-6) has preserved to us a passage from a comedy of Diphetus, named Πολυπράγμων, "The Busy-Body," which amusingly illustrates the ingenuity of the lower order of chapmen. "If you ask him the price of a pike," says one of the characters, "he will tell you ten obols, not specifying in what coinage ; and when you are about to pay the price, he will tell you that he sold it for Æginetan obols ; but if he has to give you the change, he pays it in the coin of Attica : thus securing the advantage both ways." "The strongest proof," observes Muller (Dor. ii. 12), "of the ancient commerce of the Peloponnese, and of its great extent, is the Æginetan money ; the standard of which was, in early times, prevalent in the Peloponnese, in Crete, and even in the north of Greece, since the early Bœotian, Thessalian, and Macedonian coins were adapted to it before the time of Philip."

‡ His character is exhibited in the caustic reproach of Plato, "When Socrates suffered, Aristippus was at Ægina."

§ Styled Πλοῦτοι. See Athenæus, vi. 19 :—

οἷς δὴ
Βασιλεὺς Κρόνος τὸ παλαιὸν·
ὄπτοις ἄρτοις ἠστραγάλιζον
μάζαι δ' ἐν ταῖσι παλαίστραις
Αἰγιναῖαι κατεβέβηντο
ὀρυεπεῖς, βώλοις τε κομῶσαι.

‖ Praxidamas of Ægina, B.C. 540 ; Pausanias, vi. 18 : the statue was of cypress-wood.

¶ Plutarch, Quæst. Græcæ, vii. 204, ed. Rusk.

** Viz., from about 720 to 440 B.C.

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to Æginetan sculptors throughout the civilised parts of Greece and her colonies—with the exception of Athens—and superseding the employment of native artists. We read with surprise how that, after enduring so long and so disastrous a siege, crowned by expulsion from their native country, and subsequent persecutions which amounted almost to extermination, the exiles were so far from allowing their names to be blotted out of the page of history, that on returning to Ægina they resumed their ancient occupations, though with diminished glory. This arose, however, from the eclipsing lustre conferred upon Athens by the philosophy and wealth of her citizens; in spite, however, of her rival, the ἐργάσια Αἰγιναῖα were in the highest request, consisting of small marketable commodities, in which art and manufacture united to produce the most elegant utensils of civilised life, such as vases, idols, and bronzes. The production of such articles as these secured to the island the benefits of a remunerative commerce, and in some measure compensated by intrinsic advantages for the loss of that show of superiority which circumstances had torn from her brow.

We are told by Pliny* that Myron, who lived about 440 B.C., preferred the Æginetan bronze to that of Delos, Sicyon, or Corinth; and the manufacture of candelabra, which he says was peculiar to Ægina, stood so high, that the bowl of Æginetan manufacture, combined with a shaft of Tarentine, constituted the most elegant manufacture which could be obtained in Greece. Thus, what had made Ægina the centre of fine art in her prosperity, made her the manufactory of Greece in all that concerned the elegances of furniture in her decline: in these, invention and mechanism of a high order were united, and preserved to Ægina the enjoyment of those benefits until the overthrow of Grecian independence.

With these facts before us, we cannot be accused of indulging a fanciful hypothesis, when we give expression to an opinion, that the wisdom so highly commended by Pindar, and so fruitful in its effects over a long period, was one of the principal sources which gave birth to the civilisation of Eastern Greece. And strange, indeed, it is that, without agricultural advantages or mineral wealth, this little island should so long have taken the lead in refinement, whilst Crete, Samos, Naxos, Chios, Rhodes, Corcyra, and other islands far superior to it in size and in wealth, and often possessing large fleets, gave birth to so few names of persons celebrated in the games or illustrious in art, previously to the fourth century, when compared with Ægina. Unhappily, while the Muse of History has supplied us with abundant records of individual crimes and political disasters, we possess but spare and scanty notices of those who devoted their lives to the promotion of human happiness and the refinement of society by the slow and silent arts of industry and ingenuity. Had the treatise composed by Aristotle on the laws and constitutions of the Grecian cities but reached our times, there is little doubt that the laws of Ægina would have shone forth conspicuous among the rest, as certainly they would have afforded more interest and instruction than the records of all those warriors who devastated the plains of Hellas. "The captains of ancient Greece," says De Pauw, "have transmitted to posterity nothing but the shadow of an empty name, and the remembrance of blood profusely spilt; but her philosophers and poets have left upon earth monuments of inestimable value, such as can perfect the taste of civilised men, and polish the manners even of barbarians."

The modern capital of Ægina is situated on a precipitous rock, still exhibiting some traces of ancient fortifications, and which in all probability formed the defence of what Herodotus calls "The Old Town." On account of its distance from the sea, it must have been less exposed than the town at the port to the attacks of the pirates who of old infested, and still infest, those seas; and it is more than probable that it is identical with the old town of Œa, mentioned by Herodotus† as lying inland, about twenty stadia distant from the port. The abundance of water upon the spot confirms this supposition; and the name appears to suggest some connection with Œnone, the ancient name of the island itself. All these circumstances combined go far to establish the conjecture above made; and if this be true, it must be regarded as the chief place of the island at a time when safety required an inland situation for the capital, and when the commerce and naval power which drew population to the maritime site had not yet commenced. At all events Paléa Khora has served as the capital in modern times, as often as security has demanded a situation removed from the coast.

The foundations of the ancient walls of the city at the Port,‡ still traceable throughout their entire circuit of

* Book iii. 3.—"Privatim Ægina candelabrorum superficiem duntaxat elaboravit, sicut Tarentum scaphos; in his ergo juncta commendatio officinarum est."

† Book v. 83.—ἐς τὴν μεσόγαιαν, τῇ Οἴη μὲν ἐστὶ οὔνομα, στάδια δὲ μάλιστά κῃ ἀπὸ τῆς πόλιος ὡς εἴκοσι ἀπέχει. Compare Pausanias, ii. 30, § 4.

‡ Dr. Wordsworth, in his "Athens and Attica," 263, observes of the port of Ægina: "From its size and beauty it once attracted the admiration of its Athenian neighbours and enemies." He refers to Demosth. c. Aristocr. 691.

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nearly two miles, exhibit one of the most complete and interesting examples of ancient Greek fortification that have survived the wreck of ages. They are remarkable for the economy of their arrangement, and prove that immense labour and expense must have been employed in their construction. They appear to be the work of one period, and being uniform in plan and execution, they bear a silent witness that they were constructed by an enterprising and flourishing people, not little by little, but by one vigorous and united effort.

Pausanias tells us,* that "near this port, which is principally frequented by shipping, there was a temple of Venus, and in the most conspicuous part of the city the Æaceum, a quadrangular enclosure built of white marble, containing some old olive trees. In the entrance," he adds, "there stood statues of the deputies sent by the Greeks to Æacus for the purpose of prevailing upon him to sacrifice to Zeus Panhellenius, and to pray for rain. Near the Æaceum was the tomb of Phocus—a kind of barrow surrounded by a circular basis, and crowned with a rude kind of stone. With this stone Phocus is said to have been killed by his half-brother Peleus, whose own brother Telanon entered the secret port by night, and raised the tomb to Phocus. Not far from the secret port there stood a handsome theatre, greatly resembling that of the Epidaurians both in size and in workmanship. Behind it was a stadium, which with one of its sides supported the theatre. At no great distance from each other there were temples dedicated to Apollo or Phœbus, to Diana or Artemis, and Dionysus or Bacchus. The first had in it a naked statue of wood, of Æginetan workmanship; the statue of Diana was draped; that of Bacchus, clothed and bearded. In a different part of the city was a temple of Æsculapius, with a seated statue carved in stone. But of all the deities worshipped by the people of Ægina, the greatest veneration was paid to Hecate. Her temple, which stood within a peribolus, contained a wooden statue by Myron, who represented the goddess with a single head and body. The Athenians, it seems to me, were the first to give her a triple form, as Alcamenes had done in the Hecate Epipyrgidia, which stood near the temple of Victory without Wings, in the Acropolis of Athens." He adds that, "on the road towards the mountain of Zeus Panhellenius there was a temple of Aphæa, to whom Pindar addressed a hymn for the Æginetans."

Beginning at the northern end of the town, we find the city wall extended into the sea, and forming a kind of breakwater towards the north. A lower wall against the shore probably extended from the breakwater to the acropolis, which seems to have risen precipitously on the side both of the sea and of the land, defended by a succession of walls and terraces, the highest of which was artificially raised at least fifteen feet, and was surmounted by the Temple of Minerva. The citadel thus communicated directly with the sea—the element of the Æginetans—and was defended by outworks. Towards the land side the city walls were from ten to fifteen feet in thickness: these surrounded the Port (probably that which was termed the Secret Port), and terminated with two large towers, one on each side of the entrance. Between this and the larger port, surrounded and defended in the same manner, was a range of docks for the construction and repair of vessels; the walls, rising with the cliff, follow the level of the high ground, and are strengthened by towers, at distances varying from 100 to 150 feet and about 10 or 12 feet thick, and defended by a ditch cut in the solid rock, about 100 feet wide, and from 10 to 15 feet in depth. Towards the north, near the "Secret Port," as described by Pausanias, this excavation seems to have been applied to the purposes of a stadium and a theatre, showing an admirable economy of material and arrangement. The wall rising to the south offers a commanding view of the stadium, in which the youth of Ægina were trained for the protection of their country and for victory in the games of Greece, whilst as a fosse it was not less useful for purposes of defence.

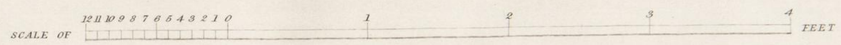
As nothing but the excavations for these buildings now appears, they are not obvious to the casual observer. Unfortunately, in the erection of the Palamidi of Napoli de Romania, the Venetians employed every available stone for that great work, even to the extent of digging up the foundations of the temple, and leaving only those stones of the Port itself which happened to lie below the water-level.

The city in former times had four gates, one of which somewhat resembles those of Platæa, Syracuse, and other strong places built by Grecian hands. The land side of the city covered a rocky platform, between which and the acropolis the ground slopes down southwards to the sea, offering a variety of *locale*, equally favourable to the beauty and the convenience of the city properly so called, for its suburbs must have extended far into the surrounding plain. One temple remains here: its proportions are given in the concluding chapter.

* Book ii. 29.

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WESTERN ACROTERIUM OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

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EASTERN VIEW OF THE TEMPLE OF JUPITER PANHELLENIUS.

CHAPTER II.

HISTORICAL AND DESCRIPTIVE ACCOUNT OF THE TEMPLE.

The temples of the Greeks were generally placed within the precincts of their cities; not only for the obvious reasons of accessibility and ornament, but also on account of the trophies and treasures which were generally deposited in them, and which, in addition to the influence of the prevailing religion, required also the aid of artificial defences, such as strong walls and citadels, and were especially entrusted to the charge of appointed guardians.

A departure was made from this very natural custom only in the case of a site sanctified by some remarkable religious association, as in the present instance, in which, as we read in the passage of Pausanias quoted in the previous chapter, the prayers of Æacus and the Deputies from all Greece having been heard, and health having been restored, the Æginetans built a Temple to Zeus, under the title of the God of all the Greeks (Panhellenius), on the very spot where the hero had offered up his intercessions.

When temples were thus situated, their remoteness, as well as the grandeur of the scene and the wildness of the country by which they were approached, formed a powerful contrast with the highly finished object to which the prayers and the footsteps of the devotee were directed. This often must have added greatly to the impression created upon the mind, when abstracted from the busy world to religious contemplation in the course of the pilgrimage.

We are strikingly reminded of the opinion of Socrates on this particular, as reported in Xenophon's Memorabilia.* "The most becoming site for temples and altars," says the philosopher, "is one which is most conspicuous, and least crossed by public ways; for it is sweet for those who see them from afar to offer up their prayers, and sweet also for those who approach from a distance and who are piously disposed." Placed on such

* Book iii. 8.

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an eminence, and surrounded by such scenery, we at once admit the fitness of those sturdy and stern proportions, both of the parts and of the whole, so much in accordance with the nature of the site, but so lamentably ineffective in a less conspicuous situation, or when placed in the midst of a crowded metropolis, and on a level with the public streets.*

The Greeks themselves were so sensible of this fact, that we find different proportions generally adopted when the temple was placed on a plain or in a city, as at the Temple in the city described in the last chapter, at Nemea, in the city of Athens, in the instance of the Portico of Augustus. Generally too, we may be permitted to remark, that architects have adapted a low and horizontal system of architecture to a lofty country, and a perpendicular and aspiring system to a level and flat district, as if convinced of the inefficacy of all attempts at loftiness amidst the wonders of mountain scenery, and seeking rather by the regularity of art and succession of horizontal lines, to present a contrast to those rugged irregularities of nature. Only in the plain, where nature presents no such contrasts, we may indulge all our ambition of loftiness with some hope of effect. Thus we see throughout Greece and in Egypt, enclosed within rocks and mountains, the horizontal temple prevailing, and in the plains of Assyria the Tower of Babel, and in the Low Countries the lofty Gothic spire.

The Temple of which these pages treat, was conspicuously seen from the entrance of the Saronic Gulf, and from the whole range of the coasts of Attica and Argolis; and when its polished and colored front was lighted by the sun, it must have been a landmark useful as well as joyfully hailed by the Æginetan mariner on his homeward voyage, as he directed his course amidst the rocks and shoals by which the island was surrounded, and which were placed there by Æacus himself, according to popular belief, for the defence of his favourite abode. Pausanias, who visited Ægina about A.D. 170, is the earliest writer who cites this story.† He mentions the Temple of Jupiter Panhellenius with the same brevity which he is accustomed to adopt when speaking on subjects of universal notoriety: "In going to the Hill of Panhellenian Jove," says Pausanias, "you find the Temple of Aphæa, to whom Pindar wrote a Hymn for the Æginetæ. The Panhellenian Hill has nothing on it remarkable but the Temple of Zeus, called by this name; they say that Æacus built it."

We have already seen that this small island consists partly of a plain, and partly of a mountainous district. The term "Oros," "the Hill," is still applied to the highest peak which rises from the eastern side, near the southern extremity of the island. It is, however, not here, but upon one of the most elevated of these peaks of the mountainous ridge which runs along the north, called Mount Œa, that the Temple is situated. Although the words of Pausanias do not contain in themselves any exact description of the remains as at present existing (inasmuch as the extent of the Panhellenian mount is not defined), yet their position, unquestionably upon some part of the mount, their intrinsic importance, and the character of the architecture so entirely corresponding with the expectations of travellers, have left no doubt upon the minds of the best-informed travellers, such as Chandler, Leake, and others, as to their identity with the Temple of Zeus, so slightly touched upon by Pausanias. A contrary opinion has, however, been maintained by some, who identify the existing remains with the Temple of Minerva, incidentally cited by Herodotus,‡ and the mount of Panhellenian Jove with the peak at the southern extremity of the island. But against this view we have to object, that no remains of a corresponding character are to be found on "Oros," either on the summit, now occupied by the little chapel of St. Elias, for which indeed there is barely space—or on its sides, which, on the south especially, afford no sufficient platform for the reception of such an edifice.

At the ruined monastery of St. Nicolas, just below the peak to the north, some fragments of a small temple are still existing, which by some inscriptions found near would seem to have been dedicated to Hebe. Furthermore, the essential evidence of extensive remains is totally wanting to support that opinion; and it may be added with deference to contrary opinions, that there is no example in Greece of a temple of great resort being placed on the top of a precipitous peak. Compared with the Temple of Jupiter in other countries and of more recent date, the Æginetan temple was certainly small in its dimensions; but at the same time the character of the architecture in the order and the distribution of its plan, was probably the most magnificent used at that time in Greece, and entirely corresponds with the majesty of the deity to whom it was dedicated. It

* We may be permitted to remind the reader that "*templum*" (originally tuemplum) is derived from "tueor," to contemplate, and is applied to any lofty object, such as the different regions of the sky. Thus Lucretius writes (Rerum Nat. ii. 8, 9),—

"Templa serena,
Despicere unde queas alios."

† Book ii. ch. 29. 6

‡ Book iii. ch. 59.

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was Hexastyle, Peripteral, with a double order in the interior, and Hypæthral. If, then, this temple had been dedicated to Minerva, we should be at a loss to imagine what more magnificent order could have been devoted to the service of the Father of the Gods, at a period when the Octostyle had not been actually produced, and possibly had not been invented.* The situation of the Temple so near to Œa, the ancient capital of Æacus, already described, is also a consideration of no small importance in the present argument. On the precipitous sides of the rocks on which the "Old City" stands, there is no convenient site for the temple, nor for the solemnities which it was intended to commemorate; whilst the site on which it is placed, an elevated root of the Panhellenian range, offers a most appropriate space accessible and seen from the city, and commanding a view of all the surrounding continent of Greece.†

The colossal eye of ivory,‡ and other fragments of the same material found within the walls of the cella, must have belonged to a statue twenty-five feet high, in a sitting posture; for a figure of that magnitude, if erect, would not have left a proportionate space between the head and the ceiling of the temple. Now, there are no examples of a sitting Minerva; but statues of Jupiter very rarely occur in any other position. We may, therefore, reasonably presume that this fragment belonged to the colossal idol of Panhellenian Jove. The patera, too, deposited in the Amphipoleion or posticum of the Temple in which Europa is represented as carried away by the amorous god, is a corroboration of the same conclusion not to be overlooked. (See Plate XI. Fig. 2.)

The chief arguments of those who differ from this opinion, are founded on the representations of Minerva on either pediment, and the arbitrary assumption already alluded to that the Temple of Zeus was placed on the peak of the Panhellenian ridge now termed the "ὄρος." The latter assumption is sufficiently answered by the preceding explanation of the interior geography of this diminutive island. The former argument is by no means conclusive, since the subjects of pediments were not always direct representations of the deity within the Temple, to whom indeed they often had little or no apparent reference. Thus, in the Temple of Minerva at Tegea, we find the Caledonian Hunt and the Battle of Achilles and Telephus: on that of Jupiter and Olympia, the Course of Pelops and Œnomaus and the Battle of the Centaurs and Lapithæ; while on the temple of Jupiter at Agrigentum we find the Battle of Troy and the contest of the Gods with the Giants. On the other hand, it must be admitted, that one of the pediments of the Parthenon, and of the Temple of Apollo at Delphi, had reference to the deities to whom they were dedicated; but these examples only prove that no constant rule in this respect prevailed with the Greeks. In the three former we find that the heroes especially revered in the country were held in honour next to the gods, and entitled to the conspicuous situation given to them in these edifices. And it cannot be doubted that in the present instance the Æacidæ are represented, and that the Minerva has no other signification than as the connecting link between them and the deity, though she is most appropriately introduced as the ἐπίκουρος or inspiring Deity of the Action, conformably with the constant representations on vases of similar subjects, and according to the express declaration of Homer in his description of the combat of Hector and Ajax over the body of Patroclus. If her figure was necessary mythologically, it was equally so to the artist, by affording him the means of filling up the centre with a statue to which, as that of the deity, he might with propriety give the larger proportions required by the Pediment.

But the exposure of the trophies pretended to have been deposited here, on an undefended part of the island, so liable to an incursion of the enemy, offers a practical objection to the hypothesis already mentioned, and one which it is less easy to answer. It is within the walls and in fortified situations that we are to look for the temples of the goddess who, under the titles of προναία and πόλιας, and as one of the most revered of the ἀκραῖοι θεοὶ, more especially presided over the defence of cities. On the other hand, the temples of the Supreme Deity, in his attributes of universal protection and government of Greece, was worshipped in temples remote from the habitations of men and undefended by walls, as at Olympia, Syracuse, and in the temple founded by Pisistratus in the ancient city of Athens beyond the walls of the city of Theseus.

The Temple of Minerva at Ægina, as we have seen above, was situated in the Acropolis, as usual in Greek cities, and its dimensions prove that it possessed all that importance which we should be inclined to assign to it, judging from the mention made of it by Herodotus,§ being one half larger than that of Jupiter. These remains, as well as those of the city, have not hitherto been sufficiently examined, much less published.

* The Temple of Minerva in the Acropolis at Athens, burnt by the Persians, was Hexastyle.

† The passage already quoted in the preface from Theophrastus applies perfectly to this situation, since the peak (ὄρος) is seen from Athens (where he wrote), precisely over the Temple. ‡ See Plate XI. Fig. 4. § *Ubi supra.*

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That Pausanias should have made no mention of the Athenæum at Ægina, is not more surprising than his omission regarding the Temple of Ceres Thesmophoros of the old city of Œa, of the Hebeum, and of the other numerous edifices with which so wealthy a city must have been adorned; unless we admit, as the most reasonable supposition, that a temple of Minerva in an acropolis was so much a matter of course as to require no particular remark. Indeed, the hasty description of Ægina which is given by Pausanias either proves that he did not extend his researches very far beyond the city walls, or else is to be ascribed to the general scope and character of his works, in which he designed to treat mostly on such objects of interest as happened to be less generally known.

The deficiency of historical evidence as to the period at which this building was erected, leaves us somewhat uncertain with regard to that interesting and important part of our subject. It need hardly be observed that the assertion reported by Pausanias, to the effect that the temple was built by Æacus, can refer only to the original foundation. The latter must have been in timber; for in the time of that traveller, *i. e.*, in the second century of our era, it is not probable that more than two specimens of primeval construction existed in Greece, and it would not be hazarding too much to say that most of the temples of ancient Hellas had then been twice, if not three times, reconstructed in stone or marble. With the few specimens of buildings which are known to us prior to those of Athens, it is almost impossible to fix precisely the period at which they were constructed, and accordingly it is from internal evidence alone that we can form any probable conjecture.

The perfection of the workmanship displayed in every part of this monument of antiquity, is scarcely inferior in refinement to that of the best period of Greek art, in the Parthenon at Athens; such excellence must necessarily have been preceded by several ages of progressive improvement; and no doubt, therefore, can exist that the Temple itself was erected in the most flourishing period of Æginetan power and proficiency.

Two opinions are offered respecting it: The first, that the Panhellenium was built before the Æginetans, in the height of their prosperity, obtained a share in the commerce of the East, and were permitted by Amasis, King of Egypt, in common with the other maritime powers of Ionia, to build a temple in that country in honour of Jupiter Panhellenius as a centre for the worship of their colonists and traders.* "It is difficult to imagine," says Colonel Leake, "that when this temple (in Egypt) was executed, the great national work on Mount Panhellenium was not already completed: it is evident, at least, from Herodotus, that at that time the power of Ægina, as indicated by its rivalry with the Samians, was already of ancient date." (See Herod. iii. 59.) "It is neither to this latter period (B. C. 479) that we can attribute the erection of the Panhellenium, nor to that in which the arts of peace were suspended through Greece by an overwhelming invasion; nor to that when the island was exerting itself to the utmost against a neighbour becoming every year more powerful; but to the earlier time when Ægina rivalled the chief states of Asia, and exceeded in commerce and naval power all those of Europe, with the exception of Corinth. Considering all these circumstances, it does not seem probable that the Panhellenium was undertaken at a period much later than B. C. 600."†

The second hypothesis refers its erection to the end of the Persian War, when the Æginetans, flushed with exultation at the large share which they had borne in the victory at Salamis, and which they could not but attribute to the interposition of their tutelary deities, the Æacidæ—especially propitiated on that occasion;‡ and being reproached by the Oracle of Delphi§ as being too sparing in dedication to the gods of their share in the spoils, resolved to show their devotion in a total reconstruction of this temple, in which not only the Deity of heaven, but especially the Æacidæ themselves, their acknowledged allies on that occasion, should be duly propitiated. On this supposition the temple would be a few years posterior in date to B. C. 479. The political circumstances of Ægina are doubtless in favour of the former supposition, especially when the magnitude of the work and the time necessary for its execution (probably not less than ten years) are duly considered; thirty-two years only intervened between the victory at Salamis and the taking of the city by the Athenians, during which

* This happened B.C. 560. See Herod. ii. 178.

† Colonel Leake's "Morea," iii. 273, 274. Ed. 1830.

‡ Herod. viii. 64.

§ Herod. viii. 122. "After these offerings had been made at Delphi, it was inquired publicly of the Deity, in the name of all the Greeks, whether what he had received was perfect and satisfactory to him: he replied, that from the Greeks in general it was, but not from the Æginetæ, from whom he claimed a further mark of their gratitude, as they had principally been distinguished at the Battle of Salamis. The people of Ægina, on hearing this, consecrated to the Divinity three golden stars, which were fixed upon a brazen mast in the angle near the goblet of Crœsus." It would be difficult to imagine an offering more elegant or more appropriate from a people of commercial pursuits, relying on the constellations of the heavens for their guidance over the ocean.

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period the overwhelming and threatening superiority of those national enemies must have engaged their attention, and forced them to devote their pecuniary resources to matters of a more practical, and perhaps of a strictly defensive character.

The former supposition is also supported by the internal evidence drawn from what are technically termed the orthographic proportions and no less from ichnographic arrangements. "A reference to the different proportions of the columns and their entablature," says a noble and learned writer,* "has been supposed to afford a criterion of the antiquity of the edifice; columns in the earliest ages are said to have been invariably low and their entablature massive; but as the art advanced, the entablature, it is affirmed, gradually diminished, and the columns became more lofty and slender: this observation may be of great service in determining the age of Græcian monuments." Pliny, too, says that "according to the most ancient method, columns are only one third of the height of the whole building."

A comparison of known orthographic proportions delineated at the end of this chapter will tend to confirm this suggestion. The most archaic examples of columns show a more rapid diminution of the shaft; the absence of the entasis; the use of three grooves in the hypotrachelion or necking, rather than one only, as in the more recent examples; the parabolic section of the echinus (as at Corinth, A.D. 750, and in the Sicilian examples); rather than the hyperbolic, which invariably occurs in the more modern; the comparative massiveness of the entablature, and finally the profile of the crowning cymatium (materially differing from that of the Parthenon and the Propylæa), which profile, it is to be remarked, is discovered in the Temple of Theseus.†

It may be remarked generally on the plans of the Greek temples that the Hexastyle appears to have attained the utmost magnificence before 430 B.C., as already observed.‡ This resulted from the practice of surrounding the cella with a Peristyle, which probably at first had merely a portico in Antis or Prostyle. The cella, as the habitation of the Deity, was the regulating principle, and according to the length of this part, the number of columns in the flank was adjusted, varying from twelve, as at Ægina, to fifteen, as at Pæstum and at Phigaleia, and to seventeen, as at Selinus. The Peristyle in the earliest examples had wider intercolumniations in the front than in the flanks. This arrangement occasioned, as it may be remarked by the way, a defective variation in the division of the metopes and triglyphs, which arose from the necessity of giving width to the fronts for convenience of access; the expense and risk of Architrave stones of equal length was thus economised in the flanks,—this is observable at Corinth, Syracuse, and Selinus.

With greater experience of the strength and durability of these Architrave stones, this rule was reversed, and additional width was sometimes given to the side intercolumniation, to extend the length of the whole, as in one of the temples at Selinus. In the earliest examples, the width of the Peristyle in the flanks and front is narrow. In the Theseium we discover the first step towards a marked improvement in the greater spaciousness of the eastern portico, which is equal to nearly two intercolumniations; this is still further extended at Phigaleia (420 B.C.) and at Nemea: the same principle is also to be observed at Agrigentum, Selinus, and Pæstum, and may be considered a proof of their comparatively recent date; in many cases, as at Selinus,

* "Principles of Grecian Architecture," by the Earl of Aberdeen, 149.

Mr. Clinton, the learned author of the Fasti Hellenici—confessedly the most complete and elaborate modern work of the kind—has divided his chronology into periods of civil and literary history alone, without adverting in any instance to the artists whose productions have rivalled those of her writers in conferring celebrity upon Greece.

† See Principles of Athenian Architecture, Plate XXXV. The comparison of the ichnographic proportions and arrangements points equally to a more remote period. This may be observed especially in the Temple of Theseus at Athens, which has so many points of resemblance, though no doubt it is of a subsequent date.

	Feet.	Inches.
Width on the top step at Ægina	44	11·9
Length of Ditto	94	0·40
Height of Ditto	34	11·84
Width on the top of the top step of the Theseium	45	2·95
Length of Ditto	104	2·93
Height of Ditto	33	9·43

We here discover greater elongation in the latter by one column, and greater spaciousness given to the Pronaos and Posticum, as well as to the latter.

‡ Vitr. iii. 2. Hermogenes was the first inventor of the Octostyle and of the Pseudodipteron, taking away the second row of columns from the dipteral, sparing expense and labour; and thus leaving round the cella a larger space to walk in, so that if a sudden showe occurs, a great number of people, partly in the portico and partly in the temple, might be protected.

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it is very considerably widened in the flanks,* and it may be remarked here with reference to the intercolumniation of the order, and the progressive improvement in the capacity or spaciousness of the Peristyle, that the conviction which Hermogenes (as cited by Vitruvius † in the note below) justly declared of the inconvenience of the Doric style for temples, and the greater spaciousness afforded by the Ionic, was felt long before, and thus in a great measure remedied by successive experience.

We can hardly discover any criterion of judgment regarding the Pronaos and Posticum, having no earlier example than Ægina now extant; but these features of the Greek temple appear to be increased in length in the more modern examples. For the same reason the interior plan, from the want of objects of comparison, affords us no subject of remark, except that it also appears to have been lengthened as time or experience progressed. The last portion of internal evidence, viz., that of the construction itself, offers but few observations. The earliest artists appear with great justice to have relied on the size of the stones for the effect and durability of these buildings; and, accordingly, we find that the columns of Corinth were Monolithic, while those of Athens and of subsequent dates, are always of the more easy execution, being of many stones, or frusta; while those of Ægina are equally divided, half being Monolithic, and the rest of smaller stones.‡

The partial use of Parian Marble in the Panhellenium, as compared with the Temples at Athens, and especially at Bassæ, seems also to indicate a more remote period. Pliny § expressly tells that "Dipænus and Scyllus of Crete were the earliest sculptors in marble of whom he could obtain any notice." Now, they flourished about B. C. 580; and it seems probable that the quarries of marble (always more difficult and more expensive to work than those of freestone) were not opened until the erection of the Temple of Ephesus, about B.C. 612; nor was marble applied to tile-work until about B.C. 600. Indeed, the marble quarries were obliged to be worked by lamplight (whence Parian marble itself is called Lychnites, λίθος λυκνίτης)‖ and the material consequently must have been most expensive. If this be the case, it could have been used only at times when the public finances were in a flourishing condition. To this we may add the fact that the great names in art in Ægina do not occur before B.C. 540; masters of considerable note, however, may have arisen in the Æginetan school before that time.¶

These observations are offered to the reader to assist in establishing a just opinion in this interesting argument. They certainly point to a date equally removed from that of the Temple at Corinth, and the more recent one of the Theseium and of the Pantheon.

At the end of Chapter III. will be found a plan of the Platform or "High Place," on which the temple was situated, partly formed out of the solid rock, and partly built up of large polygonal stones. This platform is about 230 feet long by 130 wide, and was paved with large square slabs in two courses, of which the lower one only now remains. The temple is so placed as to leave open a much larger space towards the east, where probably the sacrifices were performed. There are some foundations of an ancient building, apparently of a Propylæum, approaching with great taste upon the south-east angle of the temple, and showing the east front and the south flank in the same view. A similar approach is found at Athens, Sunium, Priene, and in other examples. It is probable that a wall connected with this building may have enclosed a peribolus, formed into a succession of terraces, which are still observable to the south, and where possibly the games in honour of Æacus may have been held. At the north-east angle is a cave, partly formed by art, in the solid rock: this cave was undoubtedly connected with the ancient mysteries associated with the worship in this temple: the surface of the platform, having been sown with barley when explored by us in 1811, was, of course, in some parts deep

* The merit of interior space is much commended by Pausanias in describing the Temple at Phigaleia, the Propylæa of Athens; and especially by Vitruvius, iii. 2.

† M. Vitr. iv. 3. "Some ancient architects proscribed the Doric order in temples, because it proved defective and of improper symmetry. Such were Tales, Tarchesius, Pitæus, and Hermogenes: this last in fact collected a quantity of marble to build a temple of the Doric order, but changed his mind and made one of the Ionic style to Bacchus, not that the aspect, order, or figure, did not please, but only because it turns out contracted and inconvenient in execution on account of the division of the triglyphs," &c.

Hermogenes could only be employed to build so important a temple in the most flourishing times of Ionian prosperity. Teos being one of the twelve confederate cities, we must conclude, therefore, that Hermogenes wrote his treatise on architecture early in the sixth century, or about 570 B.C.

‡ See description of the Plates for further observations on construction.

§ Nat. Hist. xxxvi. 4.

‖ Plin. Nat. Hist. xxxvi. 4. 2.

¶ The Italian marble quarries of Canara were never worked by the Etruscans or the Romans until the age of Augustus, and Pliny informs us that down to a late date the Etruscans formed their art-productions in wood, cast metals, or terra cotta.

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with vegetable soil which had accumulated round the mouth of the cave, and which so obstructed its entrance as to conceal from us those recesses which Mr. Dodwell describes.* It is probable that an excavation of this cave might have led to some curious discoveries, which however neither the absorbing interest of our works on the surface, nor the time employed in securing our prize, permitted our party to prosecute.

* Dodwell, i. 566. "There is a cavern in the rock, at the entrance of which is a frustum of a stone column of the Doric order with forty flutings (as indeed have those of the Temple at Persepolis), and three feet and-a-half diameter. In the flat surface is seen a round cavity, thirteen inches in diameter, and two or three inches deep, within which is a square hole, pervading the whole block. I penetrated some few paces further with a candle, and creeping on my knees through a small aperture, found myself in another cave, not more than five feet in height in its present state, and about ten feet in diameter. The roof is distinguished by a small circular aperture, which is cut down perpendicularly, and admits the day. It is coated with a fine plaster of a most indurated quality, consisting of minute pebbles and a yellow cement. This opening is nearly filled up with large stones, which have fallen from the contiguous temple above. It is evident, from its form, that it was not a cistern; but was most probably a Puraitheion, or fire-altar, mentioned by Strabo, xv. 733, which we learn from Plutarch's life of Aristides was used in all the temples, and which were lighted by invisible means. When oil was poured upon them, it burst into a flame in coming into contact with the fire kept in readiness underneath. The diameter of the perforated Doric frustum is a little larger than the circular aperture of the cave, and was probably placed over it as an altar."

Taking from axis to axis of the extreme columns as unity, the height of the columns and of the entablatures stands as follows :—

	Columns.	Entablature.
Corinth	0·353	0·171
Ægina	0·415	0·164
Theseium	0·450	0·156
Nemea	0·559	0·135

Taking the lower diameter of the column as unity, the projection of the capital beyond the upper diameter and the height of the columns will stand as follows :—

	Projection.	Height.
Corinth	0·265	4·060
Ægina	0·245	5·290
Theseium	0·175	5·690
Nemea	0·138	6·390

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Longitudinal Section of the Temple platform and cave.

CHAPTER III.

DETAILS OF THE TEMPLE.

The design and the structure of the temple, when compared with that at Pæstum,* render it evident that Ægina and that city, the ancient Posidonia,† had a common origin in Trœzene. The resemblance of the two buildings is remarkable, and as the only examples of the interior architecture of the cella now extant, they are worthy of particular observation, especially with reference to the colossal idols (often of such precious material and such elaborate workmanship) which they were constructed to enshrine.

The question of the Hypæthral opening (ὑπαῖον, as Plutarch ‡ terms it) in the roofs of temples, so fruitful a source of dispute and discussion among commentators,§ has received an additional light of the utmost importance from the present investigation, in the discovery of the coping or top stone against which the tiling finished towards the opening, and which is conclusive on the subject.‖ (See Plate V. flank and section.) The

* Pæstum, or Posidonia, was already a place of importance, 535 B.C., when, according to Herodotus, i. 167, the neighbouring town of Hycla was founded. The period at which the great Hexastyle Temple was built is unknown ; but if the preceding remarks as to the progress of architecture be admitted, it must have been about the date above given, that is about 40 years, *i.e.* posterior to the building of the Panhellenium.

† Paus. ii. 30.

‡ Plutarch in Pericl.

§ Q. M. de Quincy, Jupiter Olymp. Paragraph. xii. 262, 263, has exposed at great length the errors of previous commentators, and has offered conjectures on the subject which the discoveries at the Panhellenium show to have been very near the truth.

‖ Unfortunately the two fragments discovered were broken at the ends, so that the mode of finishing this member towards the Hypæthral is unknown. These stones were nicely cut to receive the upper end of the tiles and covering tiles. But the clearest evidence of the Hypæthral opening in the roof is given by the covers of sarcophagi, formed in imitation of Temples, discovered in various parts of Greece. Mr. Kinnaird has given us the adjoining example from Rhenea near Delos. (See Antiquities of Athens and other parts of Greece. Plate IV.) Messrs. Beechey (in the description of the Cyrenaïca in Plate II.) also afford us several examples of the same system.

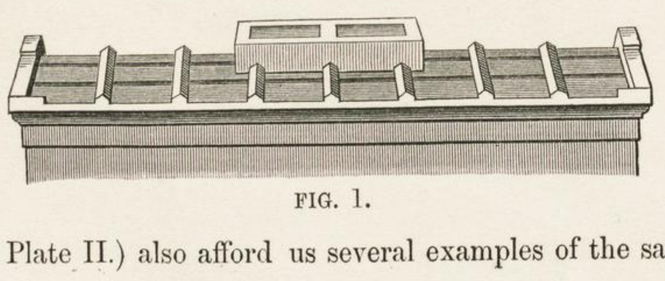


FIG. 1.

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Engraved by H. Brandard from a Drawing by J. J. R. M.Donnell R.A. 1838.

VIEW OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA DURING THE EXCAVATIONS.

Published by John Weale, 59, High Holborn.

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width of the Hypæthral is thus determined; the length must be decided by other considerations which we are about to discuss.

The ceremonies of the Hellenic religion consisted principally of sacrifice and prayer; the cella, therefore, of the Greek temple was never intended to receive a congregation, or to serve any other purpose than of a receptacle or habitation for the God, as the word Nâos (Latin, ædes) implies; upon the idol every resource of costly material and of art was employed to dignify its worship; and the architecture with which the interior was decorated was calculated to enhance the impression of the image of the God, and was made wholly subservient to that purpose. Pausanias has left us many descriptions of temples so adorned; and it is clear that no very great capacity was required. The interior was adorned with a double order of small but proportionate columns (much after the manner of our own Gothic cathedrals), dividing the cella into a nave and two side aisles: the whole of the nave was occupied as a niche by the colossal figure of the God, the aisles by statues of deities more or less associated in his worship. The design of the artist, of course, was to procure, by the contrast of proportions, the utmost effect on the mind of the beholder. And that his calculation did not fail is illustrated by the declaration of Quintilian, that "the Jupiter of Olympia (disposed upon this principle) added to the influence of religion by its majesty;" * and Livy relates that Paulus Æmilius was so affected at seeing the statue of the Olympian Jove, as to feel the presence of the Deity.†

In a clear and brilliant climate, the opening or eye (ὀπαῖον) of the Hypæthral roof was not required to be large, and it was enough that the principal object (the statue) received the full force of its light,‡ heightened by the comparative gloom over the other objects in the cella. Its situation must have been regulated by the position of the idol and of the peplum or parapetasma, a curtain which was suspended from the roof in front of the statue to protect it against the injuries of weather. The columns of the interior were absolutely required both for solidity and for the beauty of the work.

The discoveries of Panhellenium would, indeed, have been complete had sufficient portions of the Colossus been found to prove its attitude and exact position; but the discovery of an ivory eye 4·75 long, and 2·375 wide, was enough to show that the figure to which it belonged must have been at least twenty-five feet high. The statue to which it had belonged was probably of wood, a material which was in frequent use amongst the early Greek sculptors, and especially with those of Ægina; ebony, box, and sycamore being the kinds most constantly employed.§ We learn from Plato‖ that the eyes of the Minerva of Phidias at Athens were made of ivory, and that the iris or pupil was of a precious stone. It is remarkable that the centre of this ivory eye was hollowed out, obviously in order to receive some such enrichment. (See Plate XIII.)

Proceeding to a description of the plates in order, the architect will recognise one of the happiest results of these excavations in the Acroterion over the western pediment of the temple,¶ given as a vignette at the head of Chapter III. This, together with the two small female statues, was found among the ruins, so perfect in all its parts as to leave no doubt of its original design, position, and construction. The back view in Plate X., when compared with this, will fully explain the mode in which the Acroterion, in its entire composition, was fitted on to the cymatium, and also the manner in which the two small figures, executed in separate pieces, were inserted in a small plinth run with lead,** as were also, apparently, the statues of the pediment. The Acroterion itself, it should be added, was sustained at the back by a support in the form of a lion.

The design of this ornament, of which antiquity furnishes no similar extant example,†† may have arisen from

* "Aliquid adjecisse Religion:" Quintilian Orat. xii. 10.

† Paulus Æmilius Olympiæ Jovem velut præsentem intuens animo motus est. Tit. Liv. xlv. 20.

‡ Hence Propertius so well expresses the brilliant effect thus obtained in the Temple of Olympia: "Jovis Eleei cælum imitata domus."

§ See Q. M. De Quincy, Jup. Olym. Paragraph. xvii. 308; Paus. Att. i. 42; Corinth. ii. 20, 30, 32; Arcad. viii. 53.

‖ Plato Hippol. Maj. 99.

¶ The fragment of the Eastern Acroterion, which was larger and more ornate, is given in Plate XIII.

** In the Andromache of Euripides we find an allusion made to this mode of fixing statues to their pedestals, when Hermione, to fulfil her evil intentions against Hector's widow, vows she will tear her from the sanctuary to which she had fled for refuge.

†† Our museums and publications on Grecian Antiquities, in the tile ornaments of the classical roofs, in drawings on fictile vases, in paintings, and on medals, have sufficiently indicated the interesting fact that the Acroterion was of constant occurrence in the buildings of antiquity; the masonry also of the pediments, upon the upper surface of the cornice, wherever discovered in Greece, or in classical Italy, has always clearly shown that preparation was made for the reception of such important and essential ornaments, but their exact relation, design, and proportion to the pediment has never hitherto been revealed to us by any example of ancient date: the fragility of such ornaments, and the ease with which they are transported, are reasons sufficient by themselves to account for their absence from existing examples; for

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the peculiar veneration paid at Ægina to the goddesses Damia and Auxesia, whom possibly these are designed to represent, as giving additional sanctity to the Temple of Jupiter, and associated with the worship of the God. Herodotus * informs us that, being originally made of Athenian olive for the people of Trœzene, they were transported thence by the Æginetans, from whom the Athenians attempted to recover them, sending an expedition to the island for that purpose, which, however, failed, and the whole of the troops were cut off in their retreat to the coast by the Argives and Æginetans combined. Pausanias tells us "that he sacrificed to their goddesses in the same manner and with the same ceremonies as at the temple of Eleusis."

The Acroterion of the east and principal front appears to have been higher and more luxuriant in its ornamental character than that at the western extremity on the same scale. (See Plate XIII.) It was also adorned with figures on a larger scale, if we may judge from the head of one of them which was discovered ; but the shattered state of this Acroterion (as expressed in the diagram) did not admit of a more complete restoration.

The fragments of the Griffins † which form the Acroteria of the angles were sufficient only to authorise the restoration in Plate IV.

PLATE III.

In viewing the remains of the temple from the north-east angle of the platform, it should be observed that the greater part of the stones still standing are monolithic up to the higher trachelium. To the north and south were spaces each forty-two feet wide ; to the west another of fifty feet, and to the east, where the sacrifice was probably offered up, a still larger space of eighty-four feet was reserved, affording ample room for the hecatombs there consecrated to the Deity. To the south were three successive terraces for the assembled multitude, the closed approach to the Temple being in the south-east angle, as already stated. On these terraces may well have been held the games of Æacus, under the walls of the Peribolus, which probably surrounded the temple. On entering the temple from the east, we observe to the right an altar, on the top of which was a cavity sunk to receive libations.

Pausanias frequently describes altars of other deities associated with those to whom the Temple was dedicated, and on which he himself sacrificed, but this is, perhaps, the only instance in which we discover such an altar in sitû. An inclined plane to facilitate the entrance to the Temple for worshippers, or for animals about to be sacrificed, is also without example elsewhere in Greece. A contrivance somewhat similar to this was employed at one of the temples at Selinus, by which the inconvenient height of the steps compassing the Stylobate was obviated. Four columns of the exterior portico from the Antæ were enclosed with a railing of bronze or iron, the marks of which are visible upon the sides of the columns. The Pronaos, also, and the Posticum,‡ had their separate enclosures, while the peristyle at the sides and the west end were open and accessible to all. The railing of the Pronaos appears to have been raised on a step as in the example of the Temple of Apollo at Phigaleia : the same practice seems to have existed in most ancient doorways, thus allowing the door by the elevation of the step to open free of the paving.

in every style of architecture, from the classical to the revival, the finish of the Acroterion has always been deemed an essential part of the integral design, and the absence of such agreeable and very natural ornaments, in our constant imitation of the Grecian pediment, is the result of that timidity which dares go no further than the testimony of example and authority can carry it ; and which has hitherto wanted only such a proof as this to warrant an indulgence in the natural desire of something which shall add what may be called a finish and completeness to the idea which the building is intended to express.

Vitruvius (iii. 3) in his description of the "foundations, columns, and entablature and ornaments" of the Grecian Temple, describes the Acroteria as a necessary feature of the architecture, and lays it down distinctly as a rule "that the Acroterion of the angles should be equal in height to half the tambour or tympanum of the pediment, while the centre Acroterion should be higher than those at the angles by one-eighth."

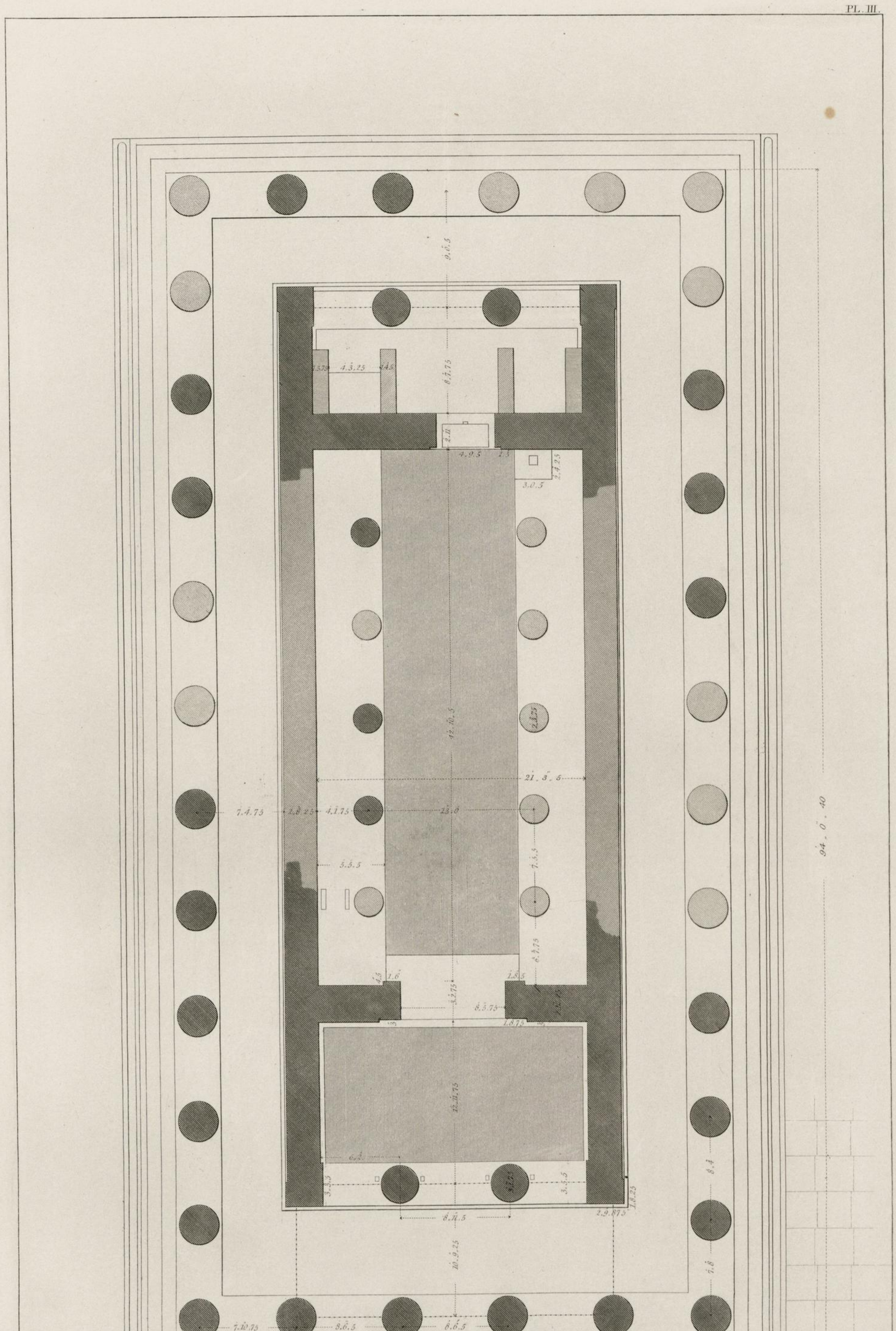
In conformity with the Vitruvian rule, the Italians of the revival who have employed the classical pediment, chiefly in the summit of their lofty churches, have placed pedestals as Acroteria (often for the reception of statues), but the pediment placed at a lower elevation may well accept the proportion laid down by Vitruvius as sufficient for the entire Acroterion. See Inwood's Erectheion for very careful delineations of Grecian fragments, of Acroteria and Antifixæ. Plates 22, 24, 26, 27, 28, 29, 34. Also in the "Unedited Antiquities of Attica."

* Book v. ch. 82, 83.

† We may observe that the Griffin is one of the symbols attributed to the Father of the Gods, and as such was proper to this position in the Temple. With equal significance we find in the Temple of Nemesis at Rhamnus the winged griffin overtaking the horse, whose fleetness cannot protect him from the avenging goddess ; in the same spirit the head of Nemesis was crowned with a series of stags. It is satisfactory to find that the height agrees with the rule of Vitruvius, being equal to one-half of the height of the tympanum.

‡ These are expressed by dotted lines in the plan.

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GROUND PLAN OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

Published by John Weale, 59, High Holborn.

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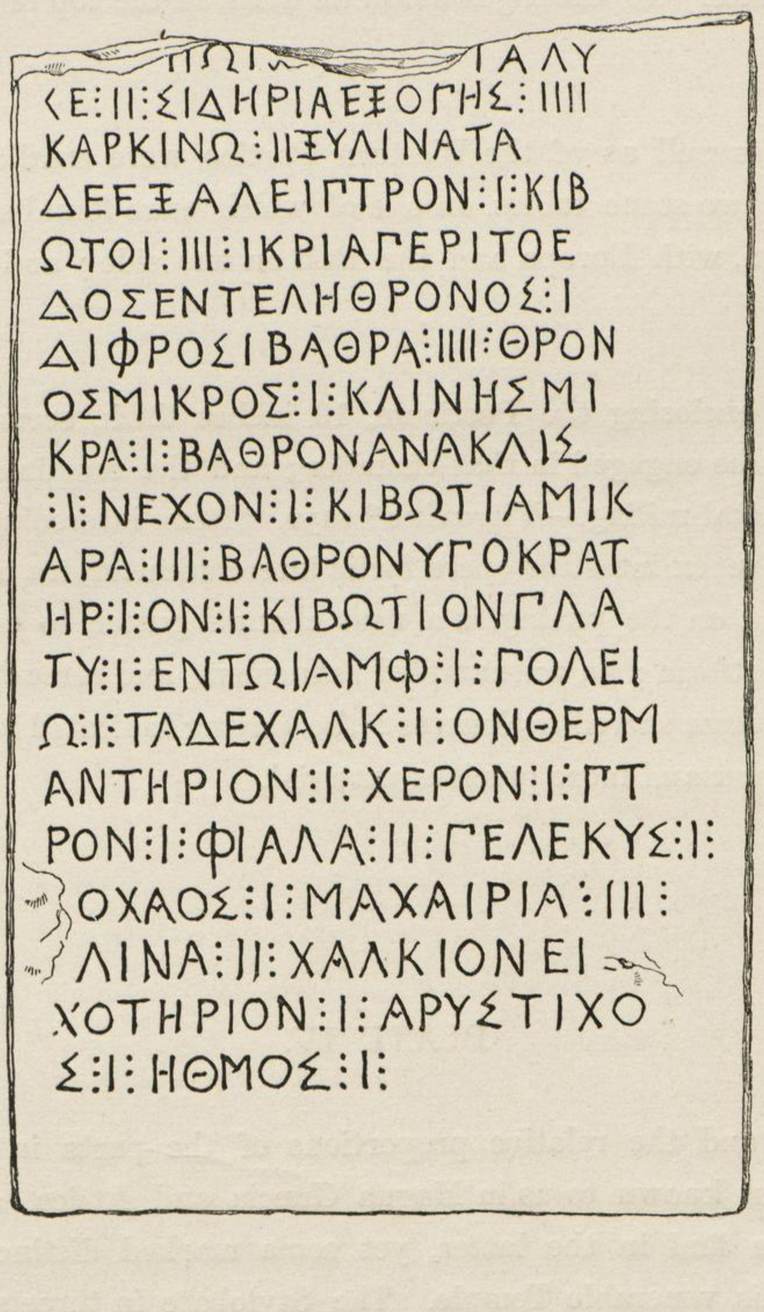
In the doorway of this Temple (8′, 5″·75 by 15′, 8″·55) a step, with a handsome moulding round the bottom, carried an architrave and linings of another material, possibly in simple slabs of marble, forming a complete casing of the opening, the profile of which step, and indications of the keys or dowels attaching this lining were still plainly discernible. The doorway in the wall of the Pronaos, equally high with the order,* was covered with a lintel of one great stone, the largest in the Temple: it was 13 feet 8 inches long,† and of about eight tons in weight. The raising and placing of these gigantic blocks required great skill, and possibly gave occasion to those fables related by Pliny and Vitruvius, respecting the elevating of such lintels upon the gateways, which appear to have been paramount features of the Pagan Temple.

The paving of the Pronaos, as also that of the nave of the Temple, was covered with an indurated stucco, of a deep red colour, calculated to absorb the blood of victims without showing any stain. In the Pronaos was found the inscription seen below, giving a list of the sacred utensils in the care of the priests and belonging to the Temple.‡ A painted fascia (see Plate IX. Fig. 1.) surrounded both the exterior and the interior of the

* See Plates V. and VII.

† The exact dimensions are 13 ft. $8\frac{1}{8}$ in., by 2 ft. $10\frac{3}{4}$ in.

‡ The inscription (which is very like that mentioned by Chandler, as having been found in the Acropolis at Athens), is as follows :—



Col. Leake has favoured the writer with the following observations on this inscription : "The part deficient at the beginning, probably contained a list of utensils in brass and iron, those in the latter metal ending with two chains, four iron window bars and two hooks." It proceeds, "The following are of wood : one box for containing perfumes (ἐξάλειπτρον) ; three chests (κιβωτοί) ; the rails (ἴκρια) round the base of the statue complete ; one throne (θρόνος) ; one chair (δίφρος) ; four benches or stools (βάθρα) ; one small throne (θρόνος σμικρός); one small couch (κλίνη) ; one bench with a back (βάθρον ἀνάκλιστον) ; one . . . . . ; three small boxes (κιβώτια μικρά) ; one base or stand for a crater (βάθρον ὑποκρατήριον) ; one small broad chest (κιβώτιον πλατύ) in the Amphipoleium (the vestry or apartment at the back). The following are of brass : one vessel for heating water (θερμαντήριον) ; one wash-hand bason (χερόνιπτρον) ; two bowls (φιάλη) ; one axe (πελεκύς) ; one bolt (μόχλος) ; three knives (μαχαίρια), and also two of wood ; one brazen vase for washing (λοτήριον) ; one spoon (ἀρυστιχός) ; one strainer (ἠθμός)."

It is observable that the dialect of the above inscription is Attic, not the Doric used by the Æginetans. From this it would seem that at the time when it was engraved, the Temple must have been in the hands of the old enemies of Ægina, the Athenians, and consequently anterior to the overthrow of Athens and her expulsion from Ægina, B.C. 403. The use of O for Υ seems to indicate a date anterior to the archonship of Euclides : but on other hand we find the H and Ω, so that the inscription must be subsequent to and probably near about, the transition from one alphabet to the other. In Athens, it is probable that the authorities were more strict than elsewhere in adhering to the old characters in public documents, until the new were actually enforced by public authority. Hence this monument may be several years anterior to B.C. 404, and cannot well have been later than that date, when, as we know, the exiled Æginetans returned to their island.

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entablature of the Peristyle of the cella. The entablature of the Pronaos was not discovered ; but the architrave still exists, exhibiting the guttæ at intervals, and showing that triglyphs and metopes were employed here, as in the Temples of Jupiter at Olympia, of Apollo Epicurius in Arcadia, and of Hercules at Thebes.

The ceilings were probably of wood, or of some equally perishable material, those of marble or stone, always remarked by Pausanias (as at Athens and Phigaleia), being exact imitations of wooden panelling, adapted to this situation. During our investigations, some portions of plaster were found, which may be supposed to have belonged possibly to this part of the edifice ; either as ceiling, or as protection of the timbers from wet.

The interior lower and the upper orders (in columns of sixteen flutes) were ceiled, the indications of which are still visible on the architraves. In the face of the architrave are marks indicative of some objects having been suspended there, such as shields, or other trophies.

The door into the Posticum, or Opisthodomus, is eccentric : the reason for this departure from rule is not apparent, and unless hidden by the statue of the God, the deformity must have struck the worshipper on entering the cella. The doorway was, however, enriched with an architrave casing of a different material, like the large doorway from the Pronaos. To the right stood an altar, in the top of which is a cavity 10 inches deep and 5 inches square.

The area of the Posticum, as well as of the Western Portico, were smaller than in the east front ; in the former were four low walls with two stone tables, on one of which were found some fragments of a large patera, in Grecian ware, of a good design, with Europa and the Bull on one side ; and on the other, Minerva armed for combat. (See plate XII.)

The Pluteus or dwarf wall enclosing the Posticum, 10 inches thick, seems to have been high enough to conceal those persons who might be engaged in that chamber ; and the remaining height was secured, as in the Pronaos of the east front, with metal railing.—Vitruvius * says, "Item, intercolumnia tria quæ erant inter antas et columnas pluteis marmoreis, sive ex intestino opere factis intercluduntur, ita uti fores habeant per quas itinera pronao fiant."—Under the cornice, on the paving, is a neat channel gutter, to carry off the water from the roof and from the pavement of the platform ; an unexampled refinement, and remarkably illustrative of the care and elegance which was bestowed on these sacred enclosures : the paving indicated is the lower course, on which the upper course was laid in some larger and more precious material.

PLATE IV.

Although the architecture and the relative proportions of the parts in their elevation bear a general resemblance to the examples best known to us in Magna Græcia and Attica, and exhibit all the refinements of form and structure which we find in the latter, yet some marked distinctions serve to show an archaic intention in the character of this venerable Temple. The Stylobate in three steps is higher, the columns have a more rapid diminution, the cap has a greater spread, the entablature is more massive, the cornice graver, and the mouldings more severe, and the echinus has the hyperbolic curvature, rather than the parabolic employed in the older examples. The height of the column more nearly approaches the most ancient example known to us, viz., that of the Temple at Corinth.†

In the plan we find six columns in the front, and twelve only in the flanks, differing from the rule of Vitruvius ;‡ differing also from the usual arrangement both in Greece and in Magna Græcia, in which double the number of the front is exceeded by one, as in the case of the Theseium and the Parthenon ; or by two, as at Pæstum and Agrigentum ; and sometimes by three, as in the Temples at Phygaleia and Selinus. The coincidence

* Book iv. ch. 4.

† The Temple of Corinth approaches nearest to the proportion as given us by Pliny of the column to the whole front, considered by him as the oldest then known. Plin. Hist. Nat. xxxvi. c. 23. Antiqua ratio erat columnarum altitudinis tertia pars latitudinum delubri.

‡ Book iii. ch. 1.

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ELEVATION AND SECTION OF THE WEST FRONT OF THE TEMPLE OF JUPITER PANHELLENIUS AT ÆGINA.

Published by John Weale, 59, High Street.

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in the number twelve with the Temple of Nemesis at Rhamnus, suggests the probability of a higher antiquity and sanctity attached to this as an archaic arrangement.

The lowest step of the Stylobate represents a parallelogram, the length of which is equal to twice the width. The same proportion appears to have been intended in the Temple of Jupiter at Agrigentum, and was probably a general rule applied to the most sacred temples; "the square," and the "four square," being the figures in which classical architecture especially delighted, no less than Jewish and Egyptian architecture.

The most distinct example of this disposition of interior arrangement is that of the Neptunium at Pæstum, the difference being, that the latter has fourteen columns in the flank, and consequently affords a more elongated interior, having seven columns in the cella instead of five, as at Ægina, and being altogether larger in the entire plan, (viz., 79. 6. 9 × 195. 4. 2.), while the dimensions of Ægina are 45. 1. 9 × 94. 2. 40. It is remarkable that the area of the cella in the Panhellenium is also a double square.

The coincidence of dimensions with the Theseium is very remarkable, and has already been adverted to; the want of length, however, in the Panhellenium has occasioned the crowding of the several porticos of the east and west fronts, the Pronaos and Posticum, and has abridged the length of the cella.

The three intercolumns of the east front, together with the returns to the Pronaos and the front of the latter, had been enclosed with cancelli, or lattice rails, as was very evident from the corresponding sides of the column and pilaster; as expressed in dotted lines on the plan. The cancelli of the Pronaos had reposed upon a delicately moulded cill. The Posticum exhibited evidences of an enclosure somewhat similar, differing only in the height of the cill, which here assumed the elevation of a wall for the concealment of the priests within.

The pavement within the Pronaos, as well as that of the Cella, had been covered with a very hard and polished stucco, of a deep crimson colour, and perfectly preserved: the paving of the Peristyle also appeared (from the sinking in of the pavement) to have had some such covering, but not having been originally so well secured from wear, or protected by the ruins, which had preserved the interior during so many centuries, it could not be detected.

The coincidence of general dimensions of this front and that of the Theseium has already been pointed out as agreeing very closely in the length of the Stylobate, the diameter of the columns, and the entire height. In comparing their proportions we shall observe that the chief and important difference consists in the length of the columns and the comparative lightness of the entablature in the Theseium. We shall observe that the Athenian architect employed only two steps in the stylobate, incorporating the top step of the stylobate in the height of his column. The statues in the Theseium, now lost, were probably in equal number and size.

In this plate the Acroterion and sculptural composition of the Western Pediment have been represented, as the best ascertained in their several details, and the most illustrative of the design; but the inclined plane at the East entrance of the temple, and the contiguous altar, also found in the eastern front, so novel in their features, have been introduced as descriptive of their locality and purpose in the original design.

It is highly probable that the Metopes of the east and west fronts of the Panhellenium were adorned with sculptures, as in the Theseium, the triglyphs discovered there showing the usual groove in which they were inserted; but no fragments of such ornaments were found by us among the remains. The central triglyphs of the flanks of the temple did not exhibit these grooves, and were therefore most probably unadorned, as is the case in the Theseium.

In the section we have described the great depth of the tympanum beyond the plane of the entablature for the reception of the sculpture, together with the structure of the entablature, the cymatium, and tiles, and the inclination of the axis of the columns * both in the fronts and in the flanks; giving that pyramidal effect to the whole pile which is universal in Greek architecture, and which in our modern imitations has never been practised,

* I owe this valuable observation to the Professor Donaldson who visited these remains in 1820. The Entasis and inclination of these columns have been given by Mr. Jenkins in the second edition of Stuart's Athens, vol. iv., in the fifth plate of his contribution.

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though distinctly recommended by Vitruvius, lib. iii. c. 3, and which is found to apply with very few exceptions to the temples of posterior date.

The depth of the tympanum beyond the plane of the entablature, expressed in this section, is well calculated to convey the principle, so important to the effect of the Greek pediment, of employing entire statues instead of reliefs commonly used in the Roman and modern works of this description. This interesting practice of the Greeks was first made known to the learned of Europe by the transport of the marbles of the Parthenon to this country: even in the restorations given us by Stuart, we are left to suppose that these compositions were in relief only; and scarcely had this fact been appreciated, when the marbles of Ægina were brought to light in confirmation of it. The superiority of this distinct and articulate method of representation, affording all the varieties and play of light and shade and gradation, changing with every hour of the day, and offering new combinations of form and composition at every step of the spectator, was universally admitted.

And while the Greek temple, with its depressed pediment, and seen at a small elevation, was the usual practice, no method could be more favourable or better fitted for splendour and variety of effect in sculpture. It is only when raised on lofty stylobates, and in taller dimensions, and when combined with the elevated roof and pediment (adopted by the Romans in a more westerly climate), that the method hitherto known in Europe, which adopts reliefs alone instead of isolated figures, can find its reason and apology.

The order and proportions of the front present that severe and antique character which might be expected of a people proud of their Doric origin. The marks of a very ancient order are observable throughout, in the large proportion of the entablature, the short column * of twenty flutings, much diminished, the salient cap and the three sinkings of the Hypotrachelium, and the large size and prominence of the upper moulding of the cornice and the cymatium. The κρηπὶς is composed of three lofty steps, of which the middle one is the least, as is the case in most of the examples. The proportion which these always bear to the column itself, whether large or small, is in the ancient examples nearly the same (something more than one third of the diameter, without any reference to their use for access to the temple), proving clearly that the κρηπὶς stylobate was always considered by the Greeks as an essential and constituent part of the Order.† The stones composing its three members or steps are placed with great regularity, one under each column, and a single stone in the alternate spaces.

The angular columns are of a larger diameter than the others, as recommended by Vitruvius. The ἔντασις is observed in these, as at Athens, Pæstum, and all other Greek examples, except the temple at the Port of Ægina, at Corinth, and at the Temple of Apollo at Phygaleia.

The inclination of the axis of the columns towards the cella, which is found to obtain in almost all the remarkable temples in Greece, is a principle worthy of particular remark, both for its obviously rational and agreeable effect as applied to monuments of this nature, and its uniformity with the assurance of Vitruvius, derived from the practice of the Grecian architects; and although he speaks of it with reference to the Ionic order only, it can never be doubted that this important principle applied equally to the Doric and all other orders, as indeed the existing monuments sufficiently prove. "The bases being made and placed," says Vitruvius, "the intermediate (medianæ) columns of the Pronaos and Posticum are to be fixed perpendicularly with the centre; but the angular ones, and those which are to be placed in the same line right and left should be fixed in such a manner that the inner line or face of the column may be perpendicular," so that the diminution of the column (which

* All the columns of the front and most of the sides were monolithic, as those of Corinth, and the remains at the Port, a proof adduced of their antiquity by Colonel Leake. Morea, vol. iii. Their preservation may be ascribed in a great measure to this circumstance.

† Mr. Wilkins, therefore, is not correct when he says in reference to this principle, in his Civil Architecture of Vitruvius, 40, "We no where find it adopted in Peripteral temples, and its existence in this building (the Temple of the Sibyl at Tivoli) is not sufficient to induce a belief that the practice was commonly adopted; for although the general effect of the temple is pleasing, it exhibits in its detail such a depravity of taste, as amounts to a conviction that it was constructed during the decline of the arts in Italy." It may be well to place on record here, as a corroboration of these views, the following letter from the late accomplished Monsieur Gauthier, Member of the Institute of France, in answer to a question on this subject addressed to him by the writer. "Mon ami, Vous me demandez si dans les études que j'ai faite des temples antiques a Rome j'ai trouvé l'axe des colomnes incliné vers l'Edifice. J'ai le plaisir de vous repondre que je puis en citer deux examples; celui du temple de Mars, aujourdhui la Douane, et celui de Mars le Vengeur, à l'arco dei Pantani, dont l'axe des colomnes latérales est incliné vers les corps de l'Edifice. Il est probable que cette inclination n'existoit que sur les faces laterales pour donner plus d'assiette au temple, car dans les colomnes des faces principales et posterieures les axes sont droits. Votrè ami devoué, M. Gauthier." Londres le 12 September, 1833. A Mons^{r}. Cockerell.

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Fig. 1.

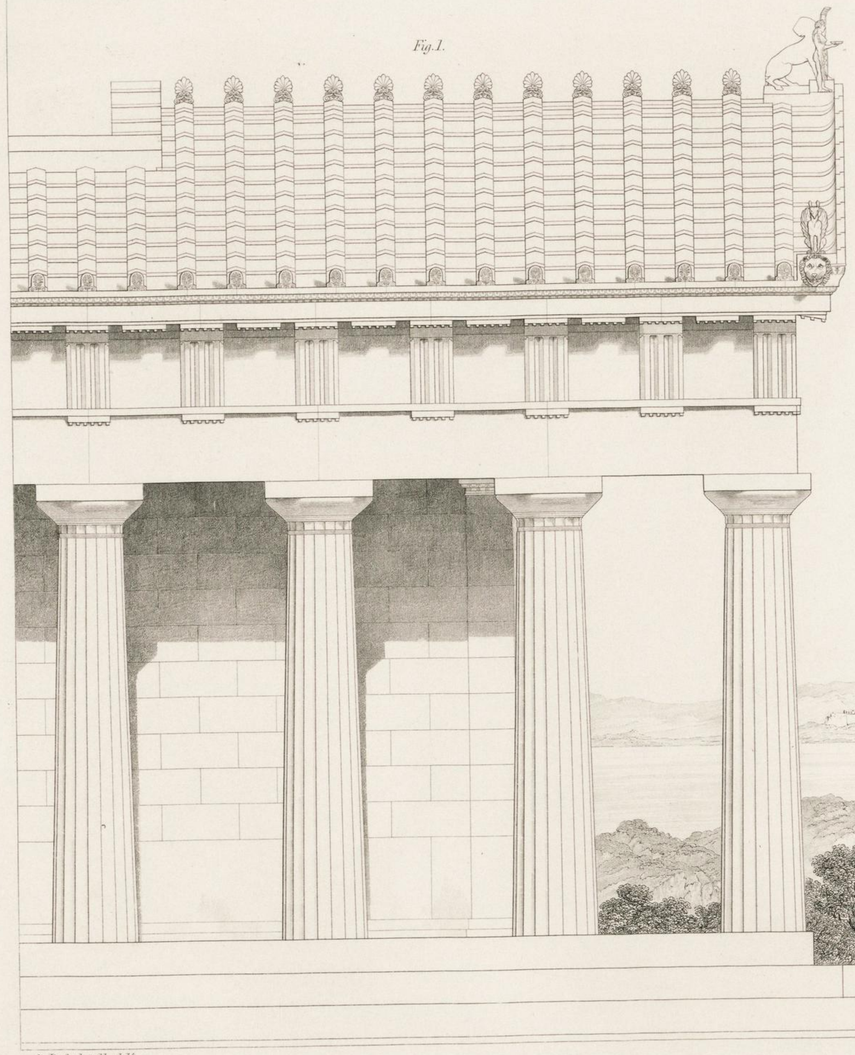


Fig. 2.

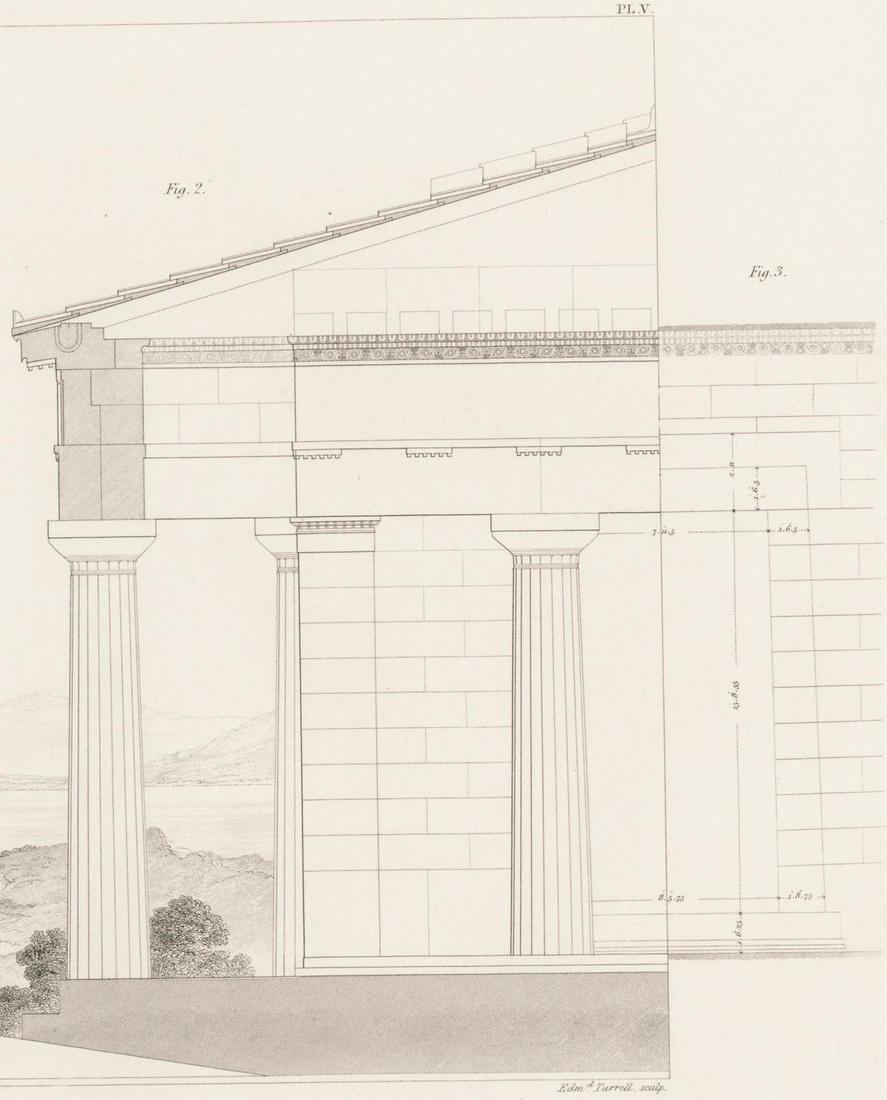


Fig. 3.

C. R. Cockerell. del.ᵗ

Edm.ᵈ Turrell. sculp.

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FLANK AND SECTION OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

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Fig. 4

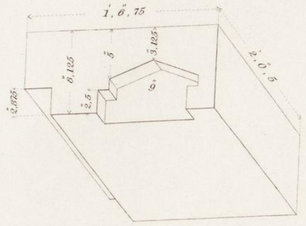


Fig. 5

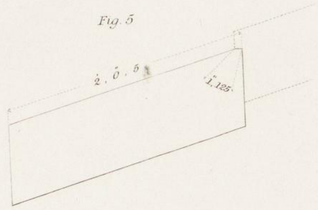


Fig. 6

Fig. 1

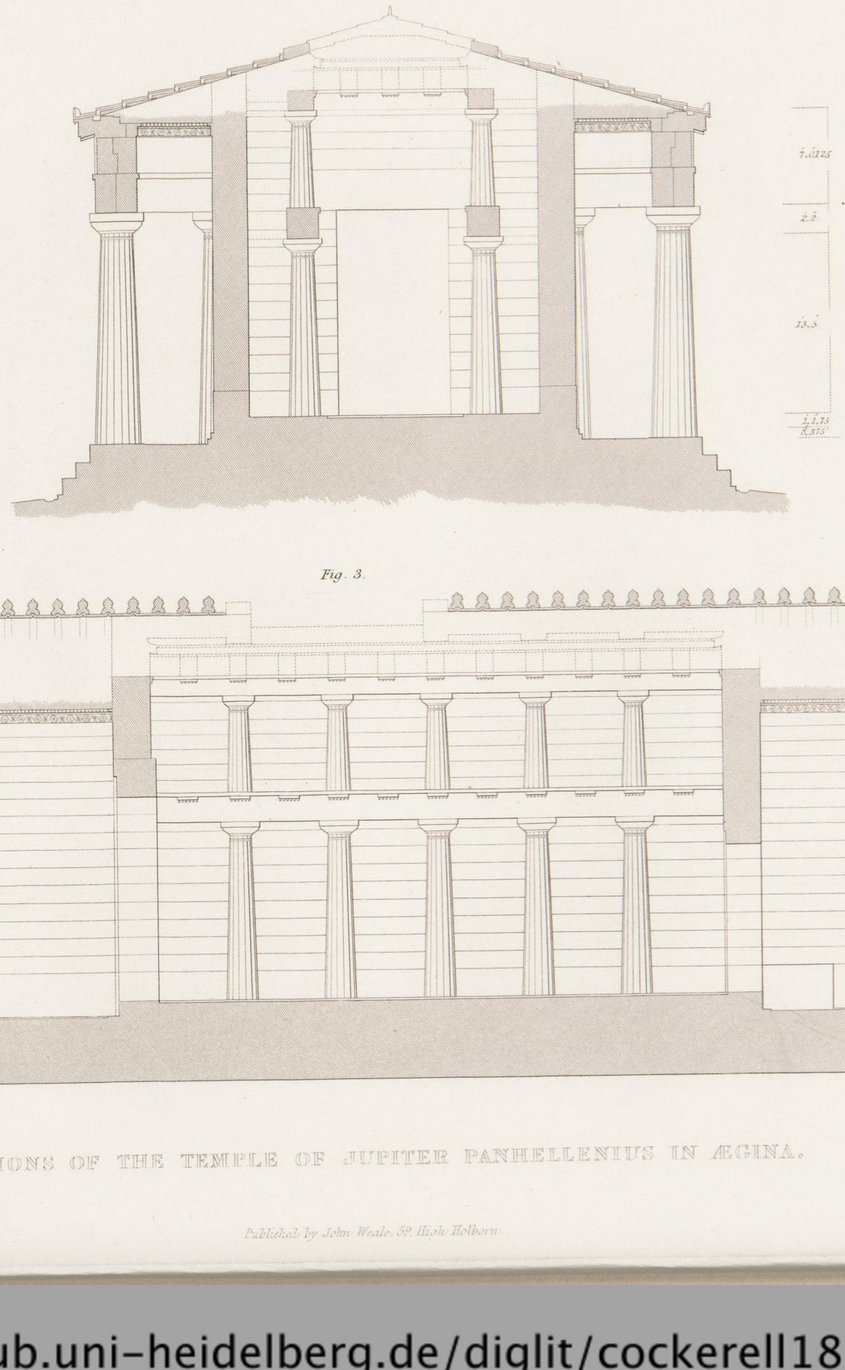
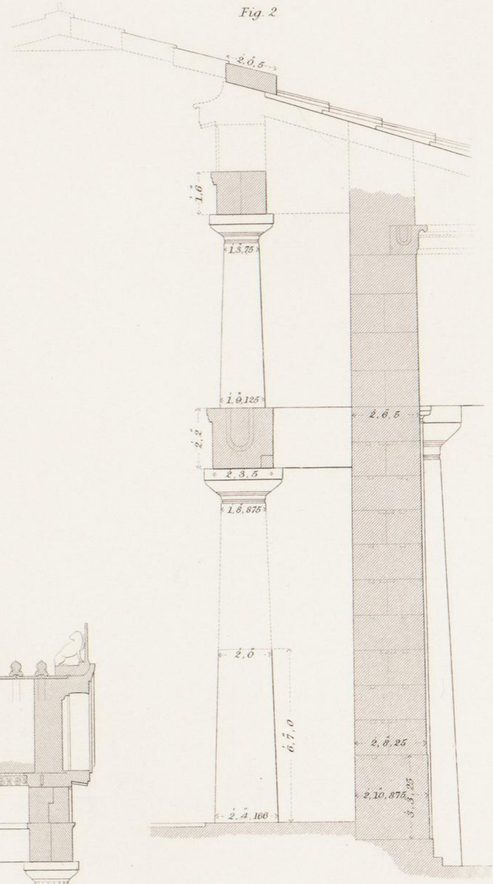


Fig. 3.

Fig. 2



C. R. Cockerell. del.t

Edm.d Turrell. sculp.

SECTIONS OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

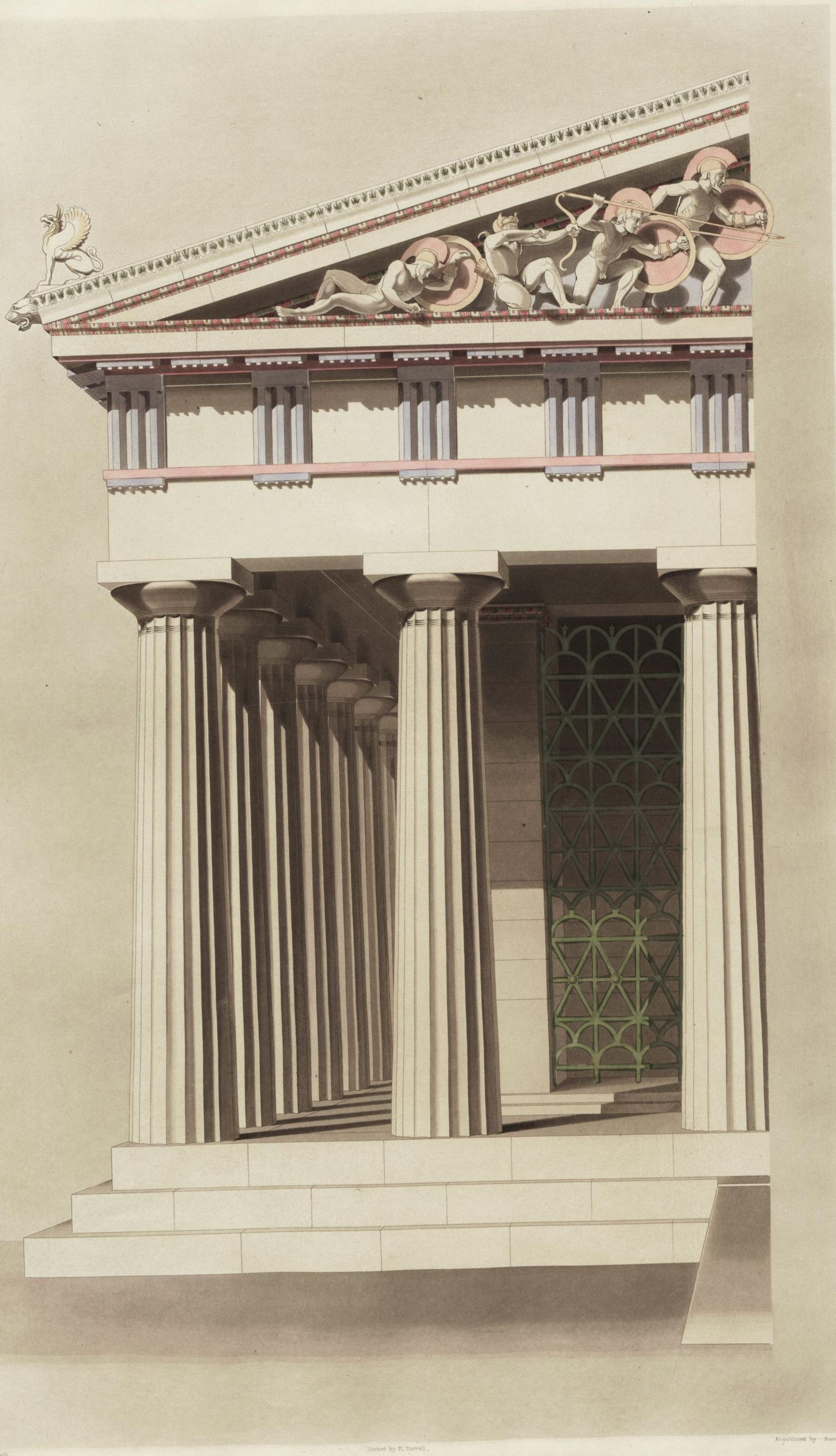
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Etched by R. Turrell.

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should be made according to the rule above described) will be wholly on the exterior line or face of the column. Thus the whole figure of the composition of the temple will also be diminished, with a rational and harmonious effect.*

The profile of the cymatium very closely resembles that of the Sicilian temples; it was formed in the first row of tiles (see Plates V. and X.), with an ingenuity and elegance which only a workman can appreciate; it was of Parian marble, painted and gilt. The acroterion on the point of the pediment, and those on the angles, were discovered amongst the ruins, sufficiently preserved to leave no doubt as to their original situation and construction.

PLATE V.

In these views of the flank and section of the Temple,—

Fig. 1 shows the south-eastern angle with the roof, the hypæthral coping, the ridge, eaves, and cymatium tiles, and profile of the acroteria. Two fragments (see Piate V. bis, figs. 4 and 5) were found with the housings for the reception of the αρμοι or covering tiles, leaving no question as to the important fact of an hypæthral opening. Unfortunately the back portions of these, or their profile towards the cella, were broken, so that all indication of their finish towards the interior was wanting; neither is there any evidence of the exact position or the extent of the hypæthral opening. The tiles at the eaves, as also the αρμοι, and those forming the cymatium, were of Parian marble, the other tiles being of baked and painted clay.

It is remarkable that the coincidence of the eaves acroteria, with the mutules of the cornice (as in the Parthenon and other examples), was not observed in this Temple.

Fig. 2. Shows the front of the Pronaos and section through the entablature of the Peristyle. That of the Pronaos appears to have been adorned with triglyphs, but none were found; the corresponding guttæ are seen upon the Epistylium. The examples of the Theseium and the Olympeium suggest two distinct methods of adornment: in the first, is a continuous frieze; in the second, triglyphs and sculptured metopes. A painted cornice, or fascia (see Plate IX. fig. 1), crowns the entablature. The antæ and the walls of the cella have a small diminution of thickness towards the top.

Fig. 3. Shows the section of the great door over which was the lintel, already described. The height of the door accords with that of the entablature; it was diminished considerably, being 8. 5. 75 at the bottom, and 7. 11. 5. at the top. A broad and elaborate dressing seems to have surrounded it, and the step at the entrances, 1. 6. 25. high, had a delicate moulding round the base.

The landscape introduced into this Plate exhibits the Acropolis of Athens as seen from the Temple, the Hill Museum, the Lycabettus beyond, and Pentelicus in the distance. To the right is the foot of Hymettus, to the left Piræus, and the olive plain of Athens.

PLATE VI.

Describes the transverse and the longitudinal sections of the Temple.

In Fig. 1, the coping stone of the hypæthral is shown, but no interior cornice to the upper order (as already stated) was found, nor any wall or Frieze. That the lower architrave had no frieze may be concluded not only from the absence of any fragment indicating its presence, but also from the actual existence of a similar

* See the inclination of the axis of the columns of the Parthenon in "The Principles of Athenian Architecture," by F. C. Penrose. 1851, ch. iv. Mr. Jenkins, in his "Supplement to the Antiquities of Athens," was the first who made public the observation of this precept in nine examples, which agree with my own observations; but he writes with too great modesty and brevity on so important a principle in Grecian Architecture, more especially considering that the subject was wholly new to the public.

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arrangement at Pæstum. Indications of the position of the upper columns were easily traceable on the surface of the lower architraves ; and also in their junctures at the back, the traces of ceilings were clearly ascertained.

Fig. 2. Section through the wall of the cella, the interior orders and entablature, and the coping stone of the hypæthral opening described in Figs. 4, 5, 6.

Fig. 3. The longitudinal section in which the extent of the hypæthral opening and the triglyphs over the upper order are suggested in dotted lines, but were not discovered.

PLATE VII.

Exterior order, with the colours and painted ornaments thereon.

PLATE VIII.

Interior orders.

Fig. 1. Shows the upper hypæthral order.

Fig. 2. The lower order ; on this are shown in dotted lines the holes by which the beams of the ceiling between the wall and the columns were sustained. N.B. The Epistylia of both these orders exhibit the usual Tænia and Guttæ, differing in this respect from the example at Pæstum.

Fig. 3. The order of the Pronaos and Posticum.

Fig. 4. Shows the antæ and the scroll ornaments above the frieze.

The character of the Doric style diminishing in all its members, pyramidically towards the top, is a principle observed in every part of the construction of this temple. The walls of the cella are diminished 4 inches in their height, being 2′ 8″·25 at the bottom, and 2′ 4″·25 at the top ; the antæ and the doors partake of the same diminution upwards.

The temple is built of a fine calcareous stone, of a warm grey colour, quarried at the eastern extremity of the Panhellenian range. The island furnishing no marble, and the quarries of Pentelicus having been inaccessible to the Æginetans, Paros was the source from whence they drew this material. Neither the practice of those days, nor the funds probably at their disposal, were such as to warrant the employment of marble alone, which, as Vitruvius tells us, was used but in few instances. An elegant substitute, however, was adopted in its absence, by the covering of parts with a fine indurated stucco, or varnish composed of lime and marble dust, laid on a face carefully prepared for that purpose by the mason. The temples of Corinth, that of Jupiter at Olympia, and those of Sicily, appear to have been adorned with the same brilliant material, for which Vitruvius* gives directions.

Plate 6. Portion of the east front.

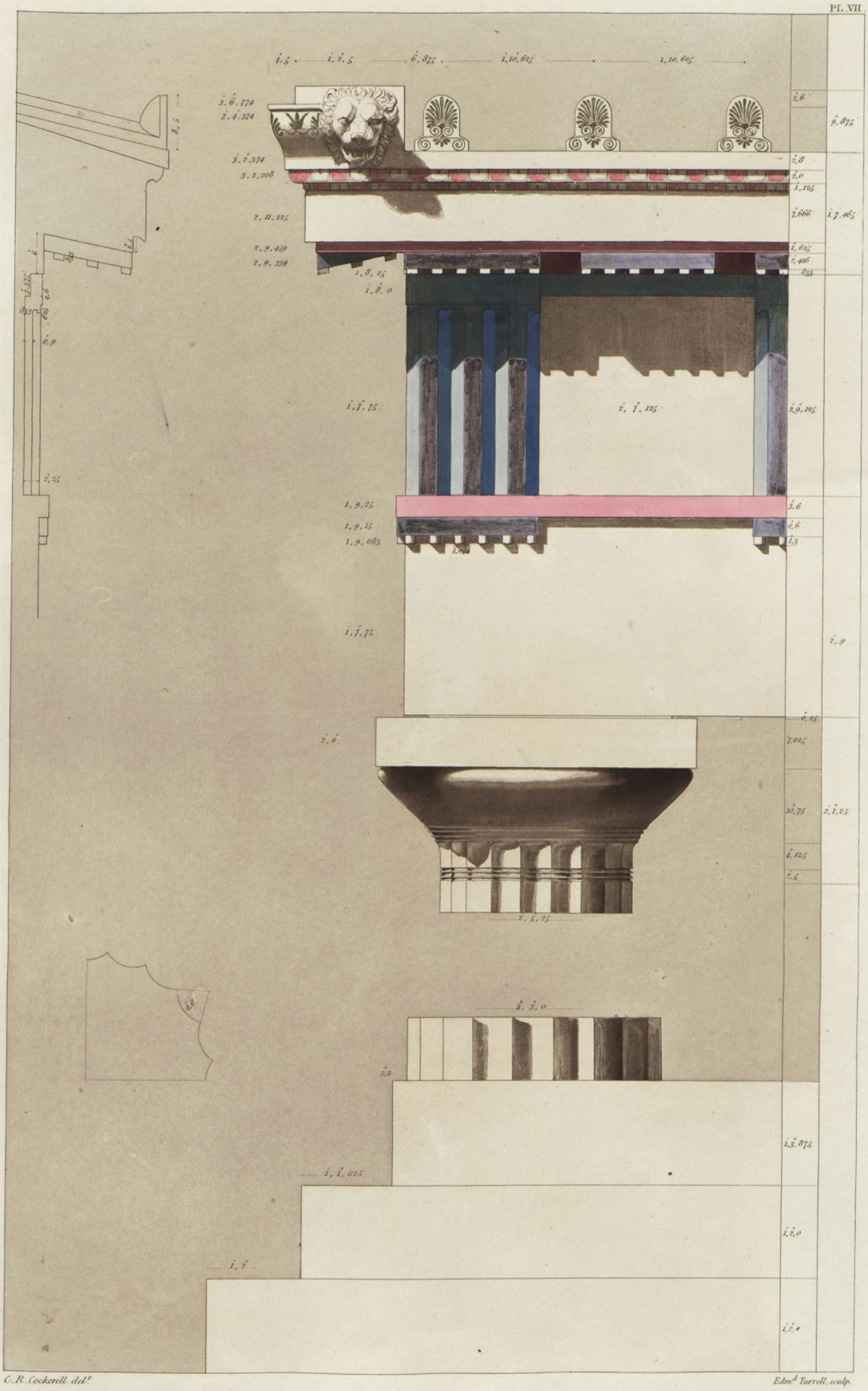
The purpose of this plate is to explain the important elements of colour and enrichment in the architectural effect of these temples. The evidence of this large use of colour † was apparent in the sculpture throughout, and

* Book vii. ch. 6.

† The colours exhibited in the Plates VII. and IX. were in encaustic manner described by Vitruvius, vii. 9, 10, 11, 12, &c. It cannot be doubted that, in the early ages of Greece, the practice was so general as to establish, as respected the Doric at least, a scarcely varying principle and mode of adapting the colours to the several members. The exact similarity of this example with the Tombs at Cyrene

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PL. VII.



C. R. Cockerell. del.ᵗ

Edmᵈ Turrell, sculp.

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Fig. 1.

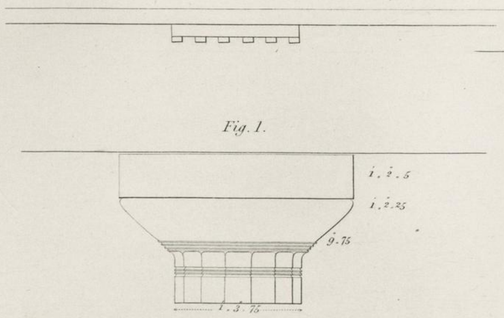


Fig. 2.

Fig. 3.

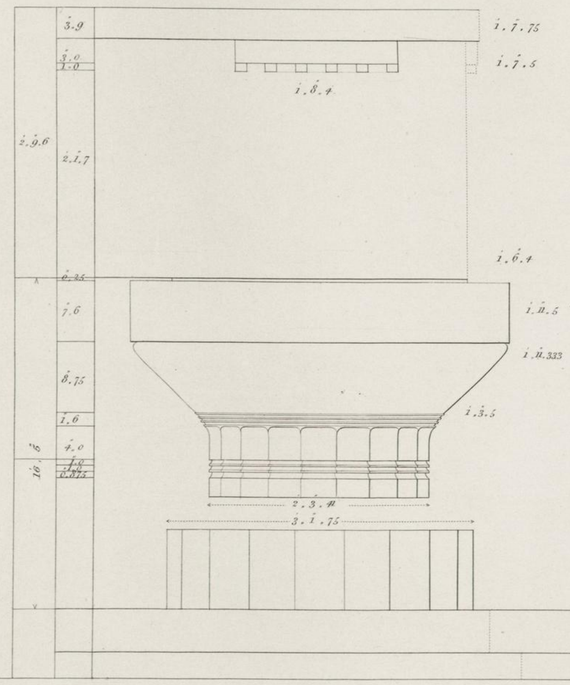
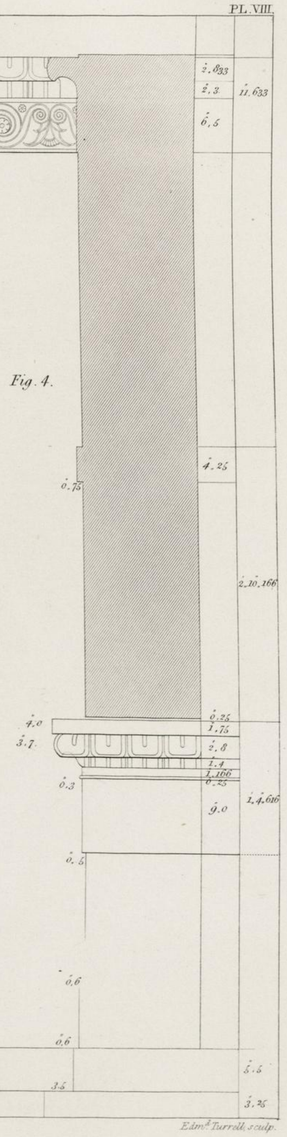


Fig. 4.



C. R. Cockerell. del.

Edmd Turrell. sculp.

INTERNAL ORDERS OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

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Fig. 1.

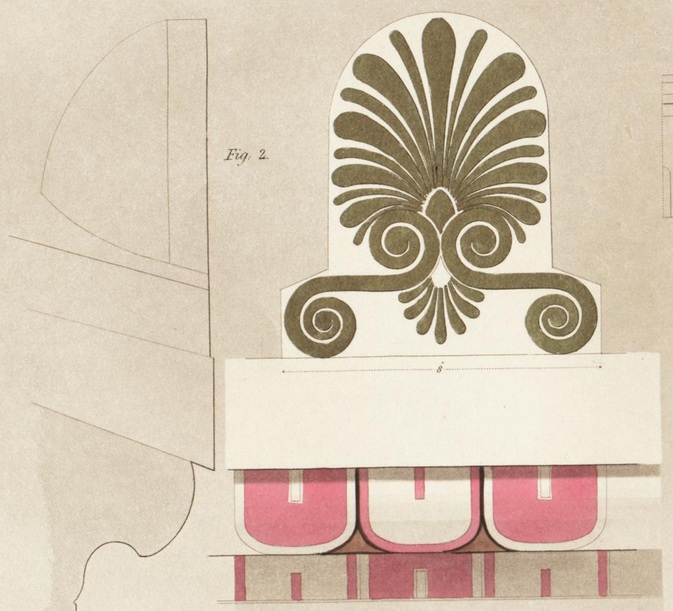


Fig. 2.

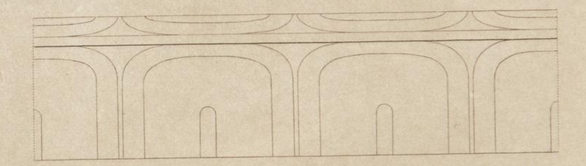


Fig. 3.

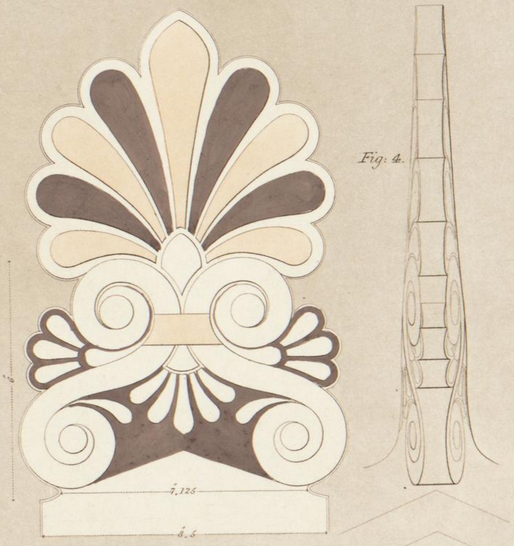


Fig. 4.

C.R. Cockerell. del.t

Edm.d Turrell. sculp.

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the members of the Entablature and Pediment here described were discovered often in all their original vividness, which quickly disappeared on exposure to the atmosphere.

The figures introduced in the pediment are those discovered in the east front.

The railing closing the Pronaos has been suggested merely as explanation of the mode of protecting these parts of the building. Examples of similar enclosures occur in various antique bas-reliefs.

PLATE IX.

The painted members of the orders.

Fig. 1. Interior scroll. In the design of this ornament we trace some resemblance to the carving on the columns and doorway of the treasury of Atreus and Mycenæ. The leaves, alternate blue and red (as are the greatest proportions of colour throughout) are wonderfully tempered by the purple and apple-green, removing all the harshness which might otherwise be objected ; and when it is considered that these were seen by reflected light, and forming but a small enrichment to a great mass of wall surface, the vivacity of the colours may be understood. The same colours will be observed in many Egyptian monuments. The bed-moulds of the pediment cornice had leaves of three varieties, blue, red, and apple-green. The tympanum itself was of light blue. The ornament of the antefix, and the honeysuckle of the cymatium were gilt, as also many parts of the sculpture, a mode of decoration apparently confined to the marble ; and discoverable only at the present by a small relief of the ornaments, painted originally in some medium which has had the effect of preserving the polished surface of the marble, while the intermediate spaces corroded by the action of the sea-air for so many centuries, have left the ornament polished and relieved. The gilding of course has long perished, but an appearance somewhat black and metallic is here and there still found on the marble fragments. Gold applied in this manner was frequent at Athens, and is observed in many parts of the Parthenon and of Minerva Polias ;

described by Messrs. Beechey, and the authority of Vitruvius as regards some of them, leave no doubt as to the antiquity and the general adoption of this practice.

Vitruvius states that "It was a general practice amongst the artificers of former times to lay beams transversely upon the walls, of such a length that their ends projected before the exterior faces of the walls ; the intervals between them were then closed, and the whole surmounted with coronæ and fastigia of pleasing forms, executed in wood. The projecting parts were afterwards cut away, so that the ends of the beams and the walls were in the same plane, but the sections presenting a rude appearance, tablets formed like the triglyphs of more modern buildings, and covered with blue wax, were affixed to them, by which expedient the ends, which before offended the eye, now produced a pleasing effect. Thus the ancient disposition of the beams supporting the roof is the original to which we may attribute the introduction of triglyphs into Doric buildings. In works of a subsequent age canterii were added, projecting before the triglyphs in a perpendicular direction to them : the direction of the ends which projected was made inclining ; and as the disposition of the tigna before gave rise to the use of triglyphs, the projecting canterii now suggested the introduction of mutules below the coronæ. Wherever we find mutules adopted in buildings of stone or marble, we may observe that the planes of their under surfaces are inclined, which indicates an intention of imitating the appearance of canterii projecting before the building in order to form the eaves." Vit. iv. ch. 11.

" We observe," says Messrs. Beechey, " that the practice we allude to does not appear in the tombs at Cyrene to be the result of any occasional caprice or fancy, but of a generally established system ; for the colours of the several parts do not seem to have materially varied in any two instances with which we are acquainted. The same colours are used for the same members of the architecture in so many of the tombs at Cyrene, that we can scarcely doubt that one particular colour was appropriated by general consent or practice to each of the several parts of the buildings. The triglyphs, for instance, with their capitals, were invariably painted blue in all the examples that we know of, where their colours are still remaining ; and the regulæ and mutules, together with their guttæ, were always of the same colour, as well as the fillet which we have described as intervening between the capitals of the triglyphs and the cymatium below the corona. The soffite of the corona was also painted blue in the parts which were occupied by the mutules ; and the space between the latter, together with the scotia, were at the same time painted red : the sides of the mutules, and the upper part of the fillet which we have mentioned as running along the tops of the metopes, together with the tænia or fillet below the triglyphs, were equally of a red colour. Patterns were at the same time very frequently painted, chiefly in blue and red, on the cymatium of the entablature and of the abacus of the capitals, and this was equally the case when the patterns were cut as well as when they were put in outline. The central amulet was usually painted blue, and the upper and lower ones red, and when there were only two, they were both painted red, which was sometimes the only colour employed when there were three. We could not ascertain what particular colour was used for the abacus and echinus, for we seldom found any traces of colour remaining either upon them or upon the shafts of the columns. In one or two instances, however, the abacus seems to have been red, and in one which we have given in the plate above (p. 452), it appears to have been something of a lilac colour. The colours of the metopes and architraves must also be left in uncertainty, and, indeed, it may, perhaps, be inferred from our never finding any positive colour remaining upon them, that the larger parts of the entablature were left plain, and that the smaller or ornamental parts only were painted. We are ourselves inclined to think that this was the case as well with regard to the entablature as to the columns ; for we should otherwise have found the parts in question occasionally painted, which we do not recollect to have decidedly seen."

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Pericles* amongst other crimes is charged with that of leaving a golden city at the expense of the solid resources of the state; the investigation of the polychromatic sculpture of the ancients has occupied a learned antiquary (Quatremère de Quincy) and abundantly shown the frequency of the practice in those days.

In considering a custom which appears so extraordinary to us, as the external painting and gilding of architecture, it must be recollected that though the Greek buildings were grand in their conception and idea, their scale was small; hence they required a greater nicety and delicacy in their execution: the colours served as a means of distinguishing and heightening the effect of the several parts otherwise inanimate. To paint white marble or other stone exposed to the open air, is discordant with our northern prejudices; but if we take into the account the fact, that in Greece all nature is full of vivid colour and variety, the constant white which might be in unison with our northern grey, would have seemed spectral and monotonous in Ægina. It may also be observed, that the mildness of the climate and the purity of the atmosphere, rendered works of finished execution much more secure from decay, and admitted refinements in sculpture and painting that would be thrown away here. The inhabitants of those more settled climates, passing much of their time in the open air, or under the shade of porticoes, would contemplate the highly wrought detail of ornament on the exterior with the same convenience as we do those of our interiors. Indeed, it will be found that the scope of the Grecian architect was chiefly the exterior effect, while within all was secondary, except the provision of a receptacle sufficient for the image of the God.

It cannot be doubted that the connexion of the Maritime Greeks with Egypt, where colour was universally applied, must have greatly contributed to the practice in Greece, especially in the early times: in Athens, and where marble was exclusively employed, it is probable that colour was less in use, though by no means excluded from those buildings, particularly gilding, which appears to have been universal in the early ages. Subsequently, we find that carving of such decorations (which was never practised in the earlier ages) was gradually introduced, as at Phigaleia, in the cymatium, which in Athens had been gilt. In the Roman times carving became universal, probably to the exclusion of painting and gilding.

It is remarkable that when our own Gothic architecture reached its utmost refinement, gilding and painting were thought indispensable to its full effect, more especially in interiors.

Fig. 2. Parian acroterion and eave tile. This appears to have been gilt.

Fig. 3. Soffite of the beak moulding.

Fig. 4. The Acroterion tiles on the ridge, together with the tiles generally, were of burnt clay of a fine texture and yellowish colour, excepting always the cymatium and the cornice tiles and acroteria, which, as already stated, were of Parian marble.

PLATE X.

The Tiling of the Roof marked (A A) is of marble, the rest in burnt clay.†

Fig. 1. Plan of the Ridge, which, together with Fig. 3, describes the form of the Parian cymatium tile and the Acroterion laid thereon. The back of the latter shows the dovetailed hole for the bronze stay supporting the figure.

Figs. 2 and 4 describe the very elegant adjustment of the Parian tiles upon the surface of the cornice, the metal stop (B B) serving the double purpose of securing the Parian tiles and joint tiles. The insertion of the stone (C C) secures the end of the rafter and adjusts the bed of the tiles.

* Plutarch's Life of Pericles.

† This most artificial and elegant mode of the covering of temples had already been discovered by us at the Parthenon, and the temples at Rhamnus and Eleusis, during the year 1811. It was justly admired as unknown till then, and pointed out to the Commission of the Dilettanti Society, on their visit to Athens in 1812, and reported by them to Mr. Wilkins, who published it in the Prolusiones shortly after.

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Fig. 1.

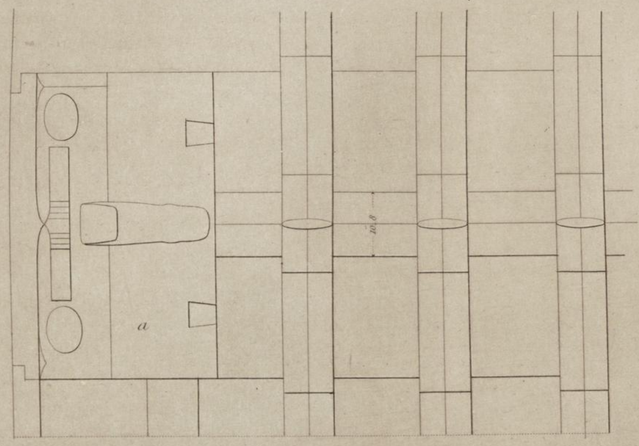


Fig. 2.

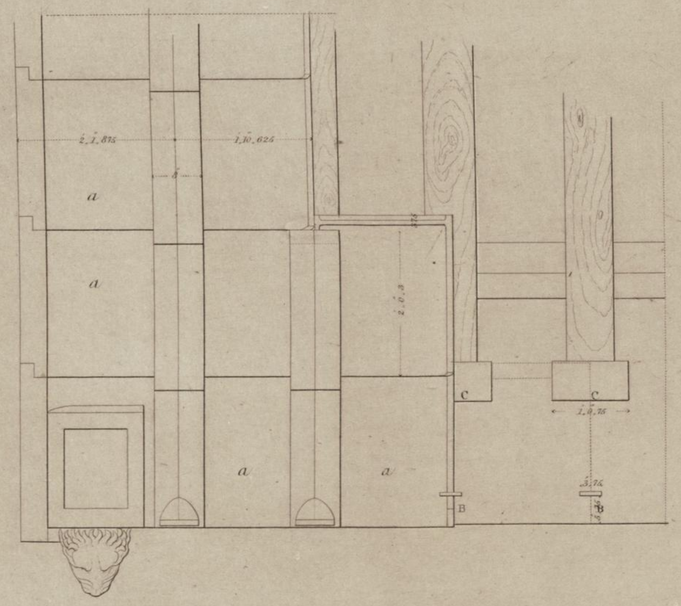


Fig. 3.

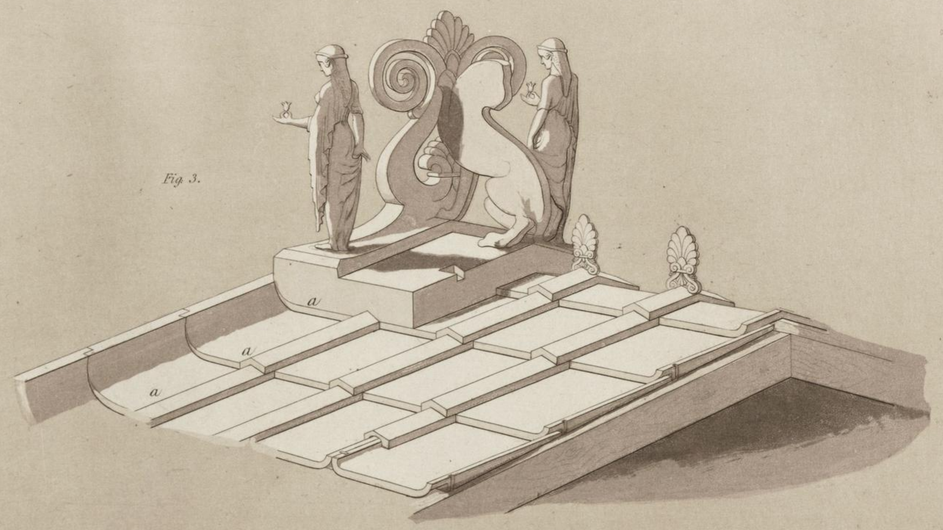


Fig. 4.

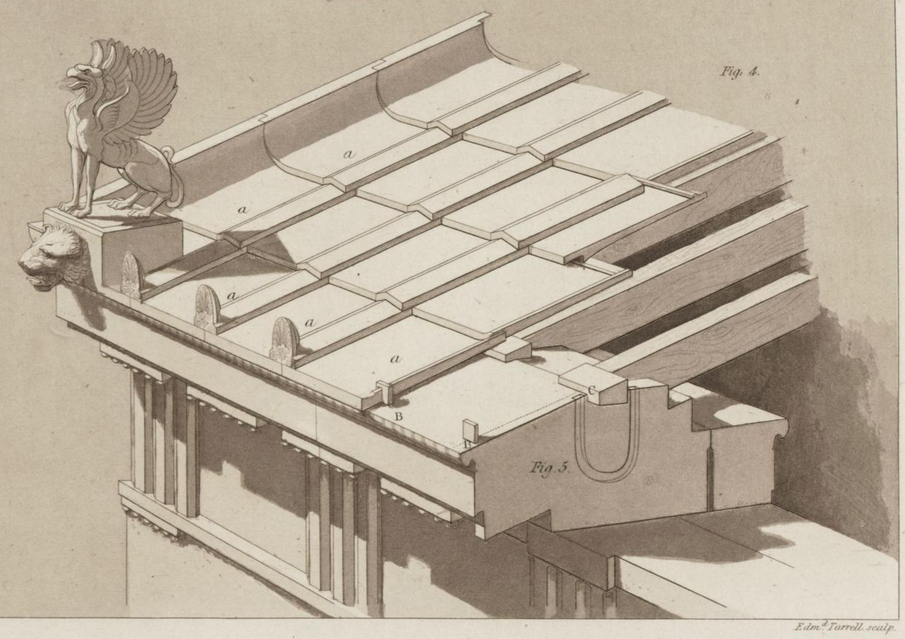


Fig. 5.

C. R. Cockerell, del.t

Edwd Turrell, scalp.

TILING OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

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Fig. 5 describes the sinking for the loop of rope by which the cornice stones were elevated, according to a system common to the Grecian temple of that and the anterior dates.

The Tile over the Pediment is admirably calculated to serve as the cymatium moulding in the apex and the termination, on which the acroteria are affixed.

This beautiful adjustment displays a high degree of art and advancement in workmanship greatly surpassing all more recent practice, and may well have given renown to Byzes of Naxos, celebrated by Pausanias.

Many ancient remains have clearly shown that preparation was made for the reception of such important and essential ornaments as the acroteria here described; but their exact relation, design, and proportion to the pediment have never hitherto been revealed to us by any authentic example. The fragility of such ornaments, and the ease with which they are transported, are reasons sufficient to account for their absence. In every style of architecture, from the classical to the revival, the finish of the acroterion has always been deemed an essential part of the integral design, and the deficiency of such agreeable and very natural ornaments in our constant imitation of the Grecian pediment is the result of that timidity which dares go no further than the authority of example can justify, and which has hitherto wanted only such a proof as this to warrant an indulgence in the natural desire of a feature which shall add a finish and completeness to the idea which the building is intended to express.

Vitruvius,* in his description of the "Foundations, Columns, and Entablature and Ornaments" of the Grecian Temple, describes the acroterion as a necessary feature of the architecture, and he lays it down distinctly as a rule, that the acroterion of the angles should be equal in height to half the tambour, or tympanum, of the pediment, while the central acroterion should be higher than those at the angles by one-eighth. In conformity with the Vitruvian rule, the Italians of the revival, who have employed the classical pediment chiefly on the summit of their lofty churches, have placed pedestals as acroteria (often for the reception of statues), but the pediment, placed at a lower elevation, may well accept the proportion laid down by Vitruvius as sufficient for the entire acroterion.†

The eaves-tiles with the joint tiles or ἁρμοί attached to the antifixa, together with those surmounting the pediment, and forming the cymatium or ἐπιτίθηδας, were of Parian marble; those within this border were in a fine tile of light yellow earth, together with the saddle or ridge-tile, and the painted antifixæ (see Fig. 4, Plate IX.), corresponding with those of the eaves, and surmounting the roof.

The Greek temple being low, and the roof necessarily a prominent object, the effect of the acroteria and tiles became of great importance, and the whole of this adjustment, which, with some variations, applies to all the temples of Greece, deserves the special attention of the architect.

Pausanias,‡ in speaking of the Temple of Jupiter at Olympia, says that the tiles are not of terra-cotta, but of marble, an invention attributed to Byzes of Naxos. "They say that at Naxos are some statues, which are thus inscribed. Evergus of Naxos, son of Byzes, who first cut marble in the form of tiles, has dedicated me to the Children of Latona—this Byzes was contemporary with Alyattes King of Lydia, and Astyages, son of Cyaxares King of the Medes." This quotation, though often made, has never been attended with the obvious reflection, that such an honour conferred upon a simple imitator in marble, of tiles previously made in terra-cotta, seems hardly warranted; but that it would be readily admitted in favour of the original inventor of so elegant a system as is here described, since he might rank among the chief contributors to the beauty and preservation of sacred edifices. Pausanias, always intent upon curious facts, has recorded this without a sufficient knowledge of architecture to explain it.

The merit of the invention may well be illustrated by the fact related by Livy, of the removal of the tiles of a Grecian temple for the purpose of covering one at Rome, but the Senate, disapproving of the act, decreed that they should be restored: they were accordingly deposited in the cella of the edifice from whence they had been

* Book iii. ch. 3.

† For very careful delineations of Grecian fragments of acroteria and antifixæ, see Inwood's Erectheion; Plates 22, 24, 26, 27, 28, 29, 34; also the "Unedited Antiquities of Attica."

‡ Book v. ch. 10.

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taken ; but the Romans, ignorant of the arts of Greece, were never able to replace them according to their original construction.

The Athenian architects appear to have made various improvements upon this construction by the enlargement of the tile, as also by making the joint tile or ἁρμός, of the same piece with the larger one, by which one side was rendered impervious to wet ;* and subsequently another method was also adopted, as exhibited in the Tower of Andronicus Cythestes.

PLATE XI.

Mechanical and structural details.

A few observations on the structure of this Temple, and on the mechanical appliances employed in its erection, so far as they can be traced, are of the highest interest, and cannot fail to assist in pronouncing its approximate date. Most of the refinements discovered and explained by Mr. Penrose, in the Parthenon, may be traced also in this example : for instance, the frusta of those columns which were not monolithic were adjusted to their beds precisely as those of the Parthenon (see p. 22), the courses of the stones used in the works of the cella, those composing the entablature and cornice, were attached by iron cramps of the same form, and run with lead, as in the Parthenon. The stones themselves were raised to their places by loops of ropes (as in Plates V., VI., and X.), a method often used in the temples of Sicily, and in that of Apollo at Phigaleia. The use of the ulivella, or lewis, is frequently traced.

The constructive or technical part of this edifice affords evidence of its probable date, and at the same time of the extraordinary perfection at which the art had arrived. Vitruvius,† treating on this subject, enumerates twelve Greek writers on mechanics as applied to architecture, but only three amongst his own countrymen. "On this head," he writes, "the Greeks have written much, and our own countrymen but very little."

It has been most justly remarked by Col. Leake ‡ that "the substitution of a more slender shaft, comprised of several pieces of stone in the place of a single mass of shorter proportions, is a natural step in the progress of architecture, in which art we generally find that the raising of large masses by the application of numerous hands, has preceded the study of a pleasing form, and the economy of materials, and of manual labour." The Druidical remains of our own country, the ruins of Egypt, and the "great stones, costly stones, and hewed stones," § especially mentioned in the building of the first Temple at Jerusalem, and the "goodly stones" ‖ of which the second Temple was composed, attest this fact in the history of architecture, and at the same time they have sufficiently shown by their preservation the greater merit of the primitive method, since the simple monolithic stones have descended to our own times, whilst time has swept away the lofty edifices which subsequent ages have erected.

In the present instance, a great portion of the columns, indeed all those which are now standing, are monolithic, while those which have fallen to the ground are composed of several pieces constructed and attached together, according to the method employed at Athens, by which the frusta were not only secured (the cedar-wood being impervious to the air, and therefore imperishable), but placed on their beds with a precision which no other method could have supplied.¶ (See Vignette at the end of this chapter, figs. 1 and 2.)

Vitruvius speaks of the block, the lewis, and the lever, as of common use among the Greeks, without adding any record of their original invention, and traces of their employment are visible throughout the remains at Ægina.

* See the Tile employed at Phygaleia. In the tile used at present in Picardy, and in many parts of Italy, we have the original here described, however debased in modern hands, and it may be remarked that the antifixæ of the ridge joint tiles are constantly seen in the buildings of the Middle Ages, in the Cathedral of Amiens, and other edifices of the same period.

† Book vii.

§ 1 Kings, v. 17.

‡ Morea, vol. iii. p. 269.

‖ St. Luke, xxi. 5.

¶ See Penrose's "Principles of Athenian Architecture," sec. ii. p. 22.

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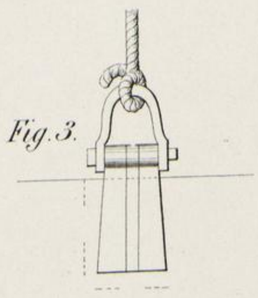


Fig. 3.

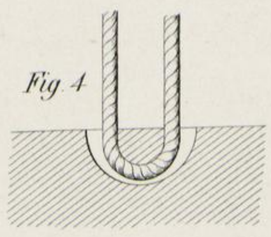


Fig. 4

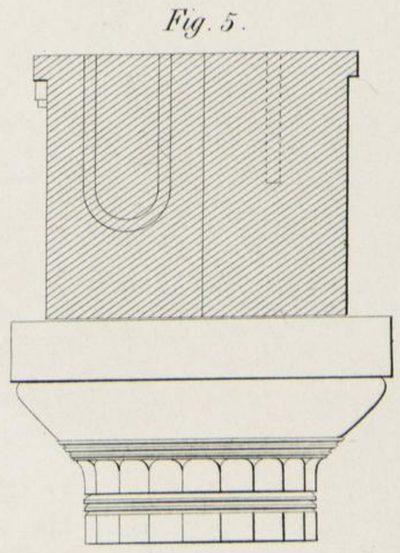


Fig. 5.

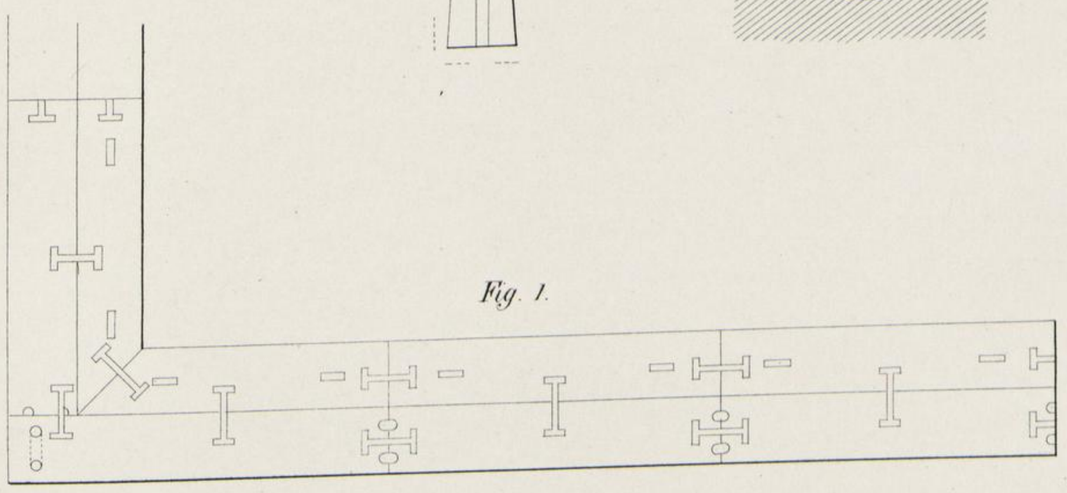


Fig. 1.

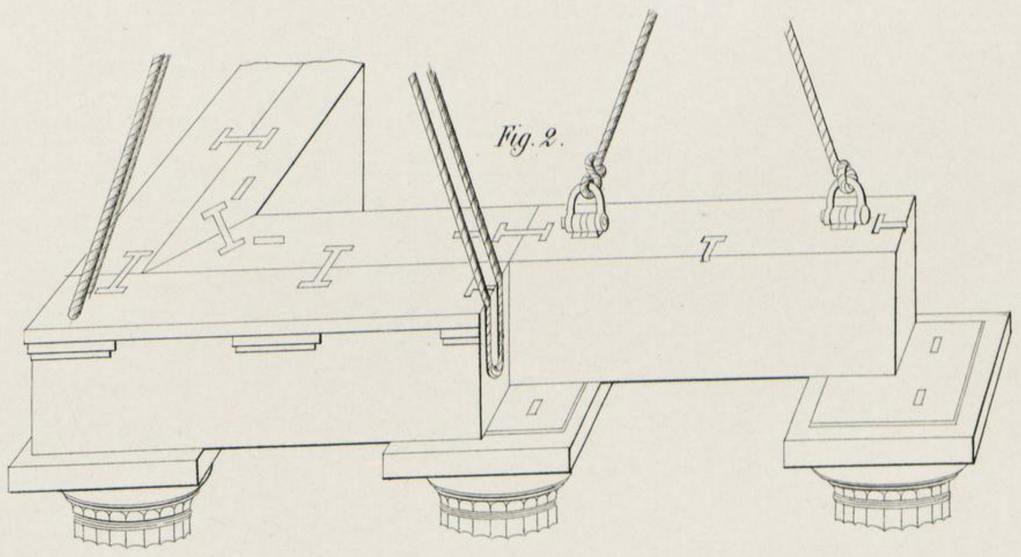


Fig. 2.

Fig. 6.

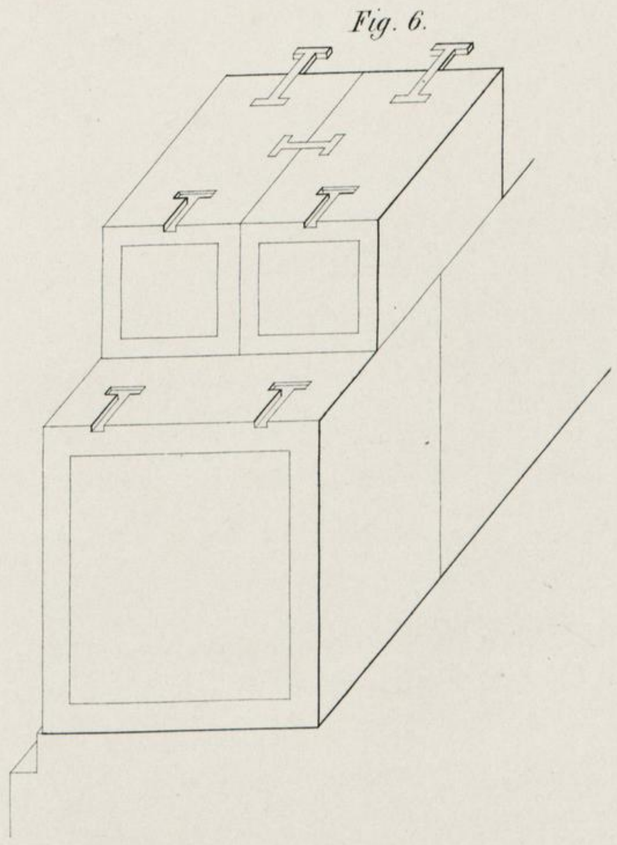
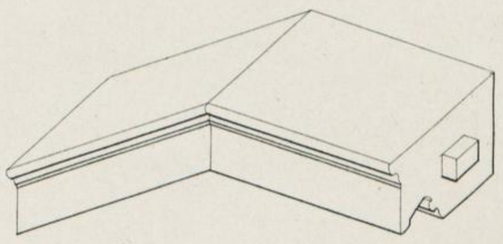


Fig. 7.



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Fig. 1.



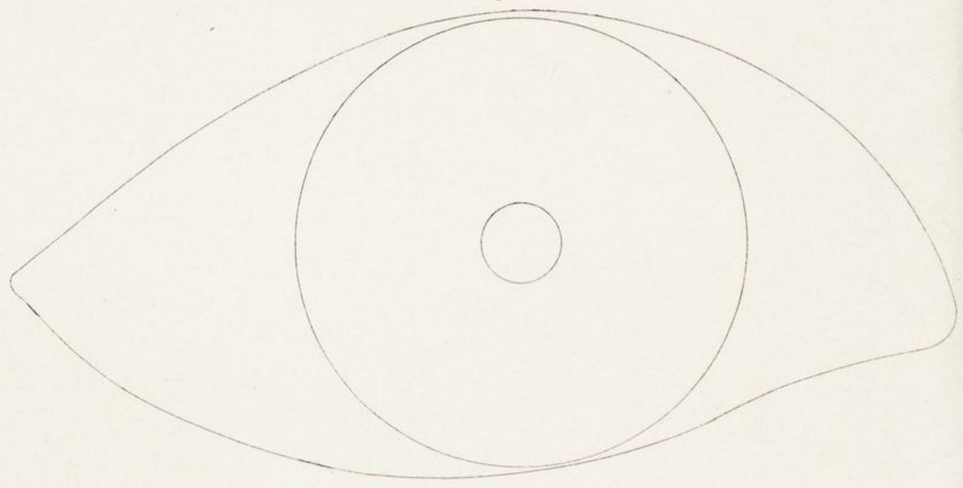
Fig. 2.



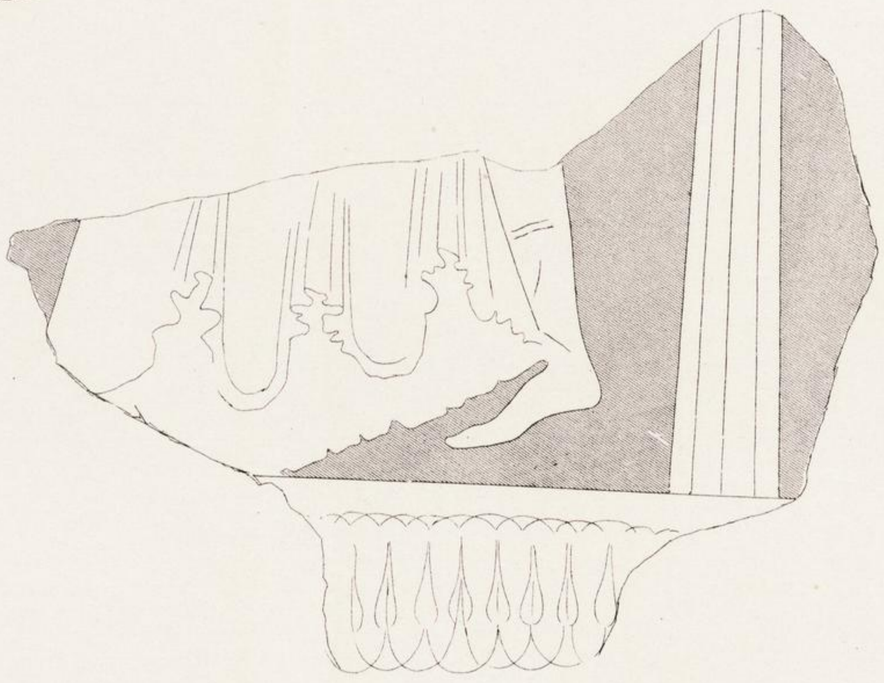
Fig. 3.



Fig. 4.







C.R. Cockerell delt

Day & Son Lith^rs to the Queen

Fig. 1.

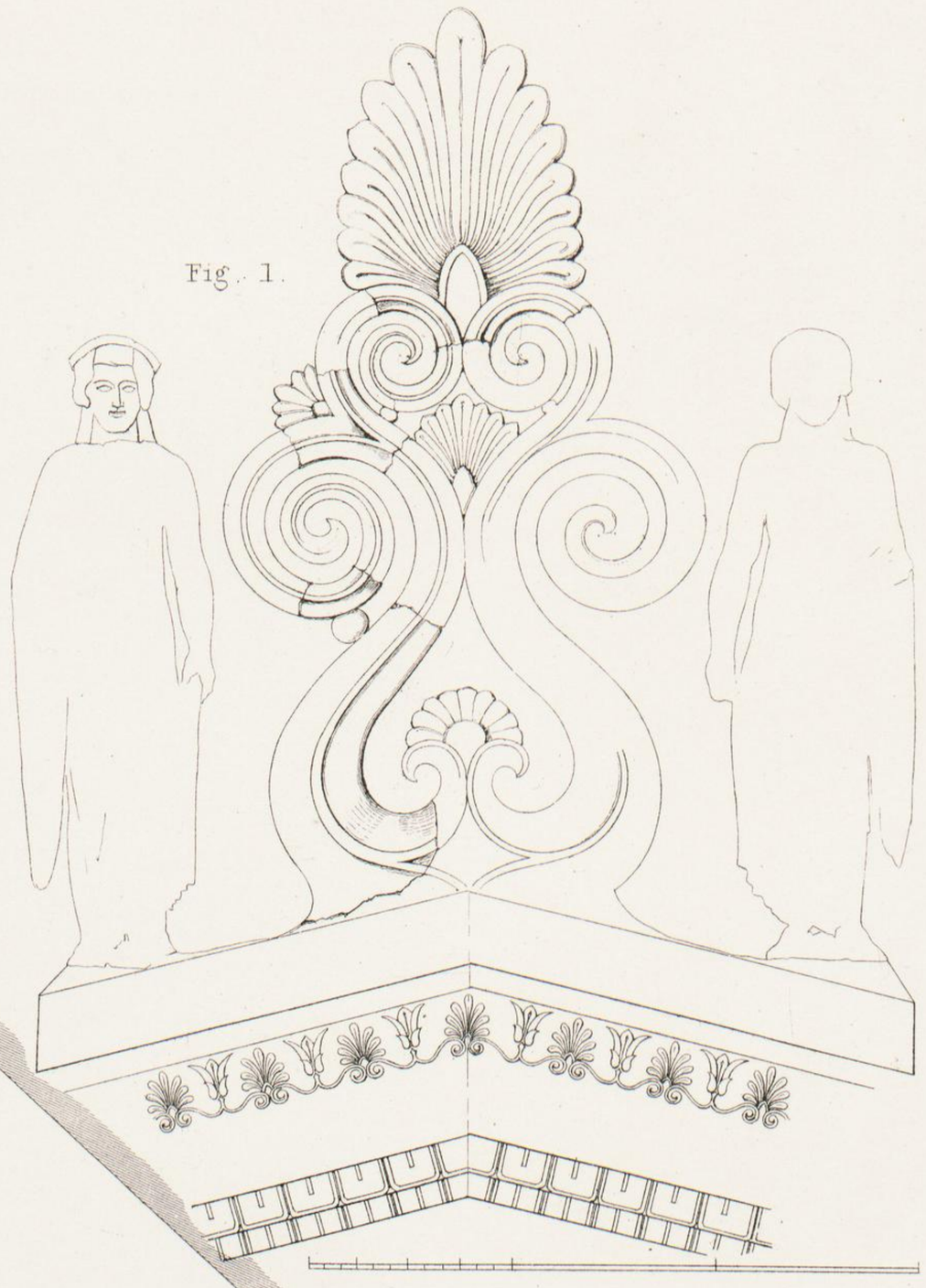


Fig 2

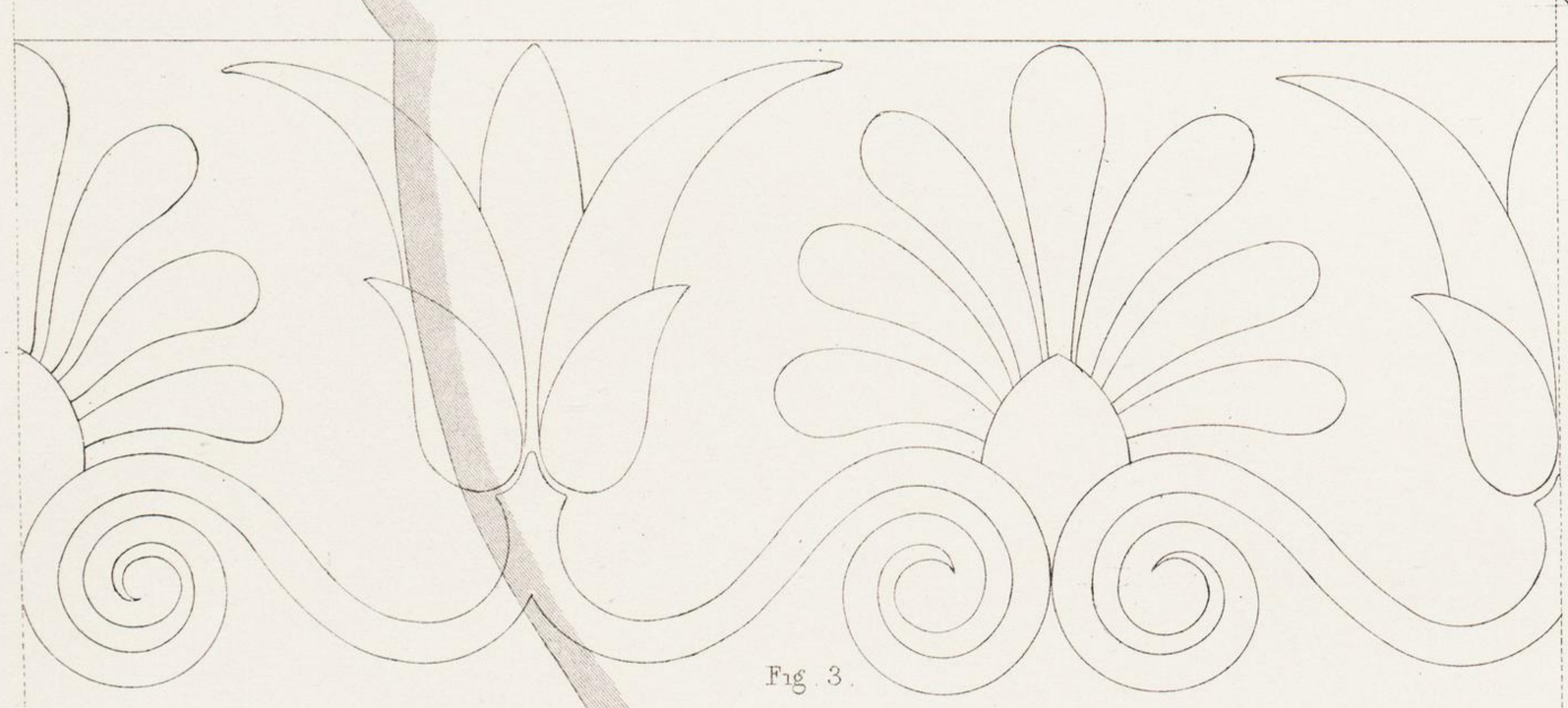


Fig. 3.

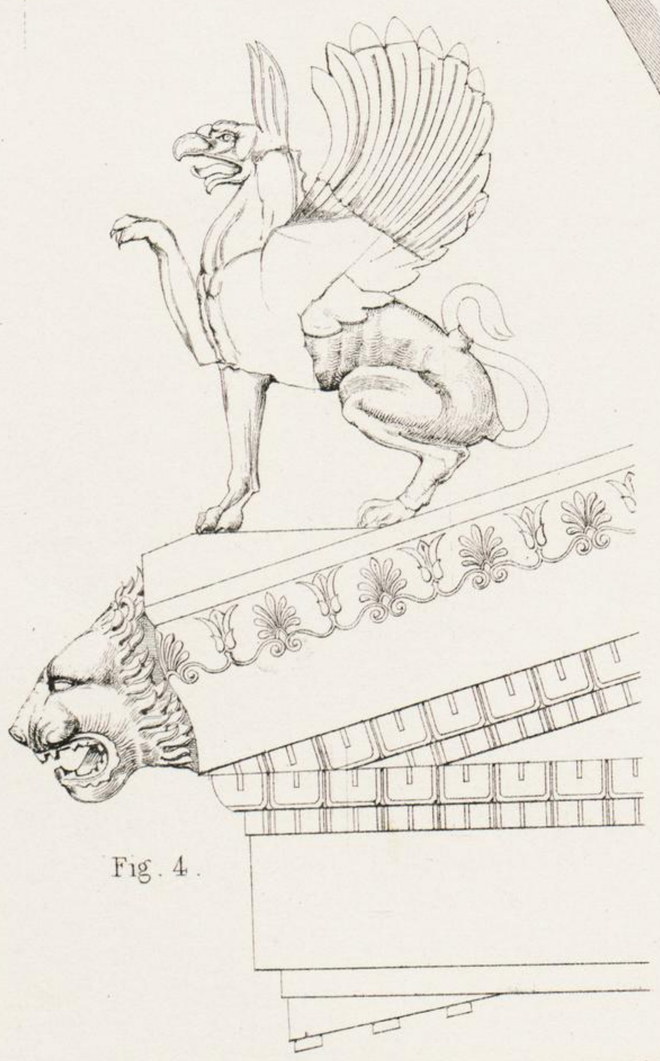


Fig. 4.

C. R. Cockerell delt

Day & Son Lith^rs to the Queen

The method of raising stones by cutting a horseshoe chase and passing a rope therein had this convenience that the joints might be accurately adjusted and finished, and the rope easily drawn out when the stones were fixed. This method is observed wherever the joints were most exposed to view, and their correct adjustment seemed of great importance, as in the external stones of the epistylium, the cornice, and the fascia over the cella; and when the stone is soft the method is a safe one, since the texture might not perhaps endure the application of the lewis, a method frequently used in the temples of Sicily.

This reason, however, does not apply to the external angle-stone of the epistylium, in which the weight depended on a small portion, as exhibited in Plate XI., fig. 3. The interior epistylium is carried by the lewis. Vitruvius describes the methods of raising weights by blocks (rechamus, trispaston, and pentaspaston), with three or five pulleys.* He describes also the forceps, but not the lewis, though the evidences of its use are common enough in all Grecian buildings; perhaps the forceps found at Athens at a later date was the instrument commonly in use in his time.

PLATE XII.

Patera, and the ivory eye of the idol of Jupiter, already described.

PLATE XIII.

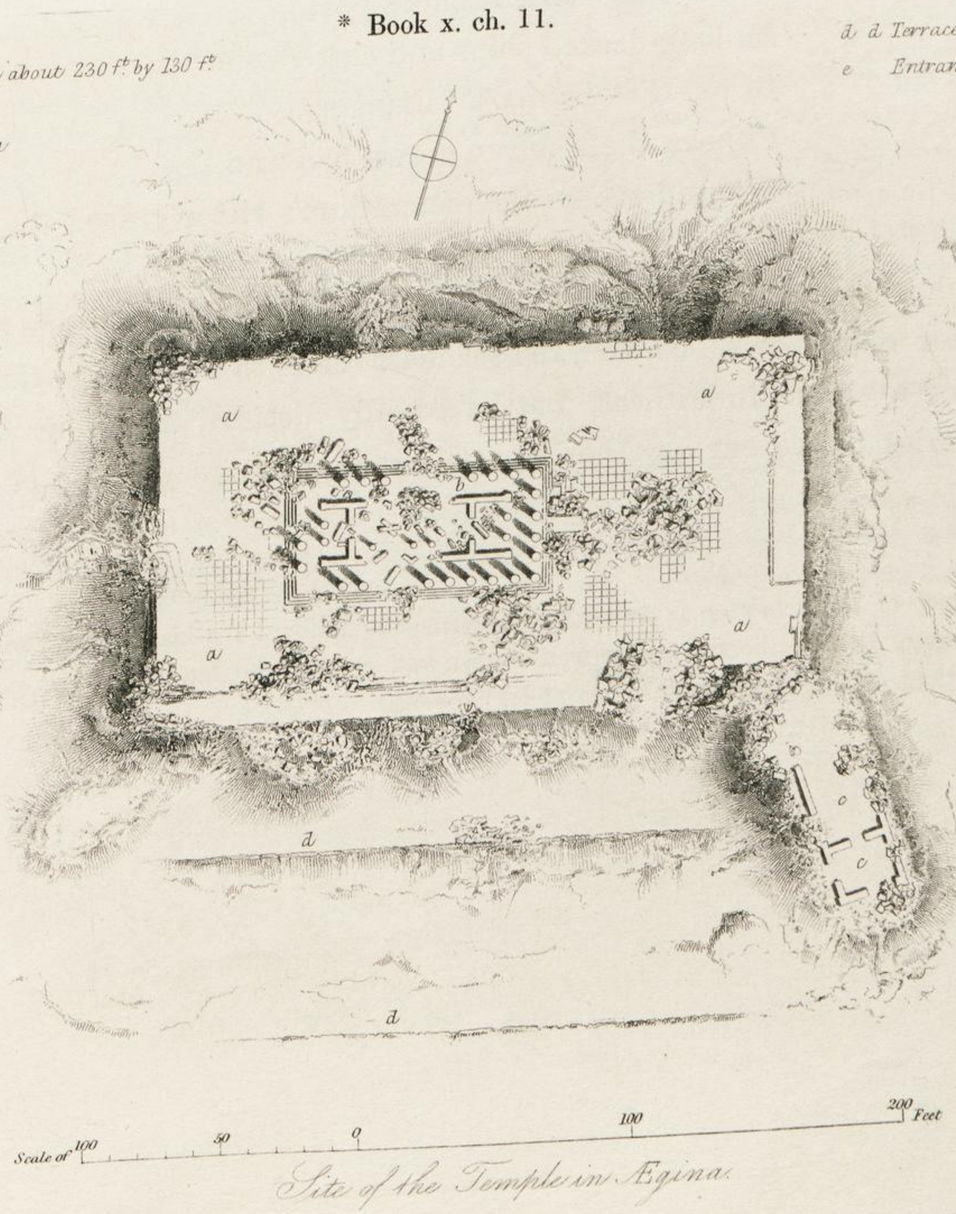
Fig. 1. Describes the fragments of the Acroterion, at the east end of the Temple, which is larger and more elaborate than that of the west end.

Fig. 2. The contour of the capital is so beautiful that it deserves a full-sized outline: its commencement from the hypotrachelion, giving a graceful development to the top of the flutings, is to be remarked.

Fig. 3. The profile of the marble cymatium in Parian marble in full size, with the painted enrichment thereon.

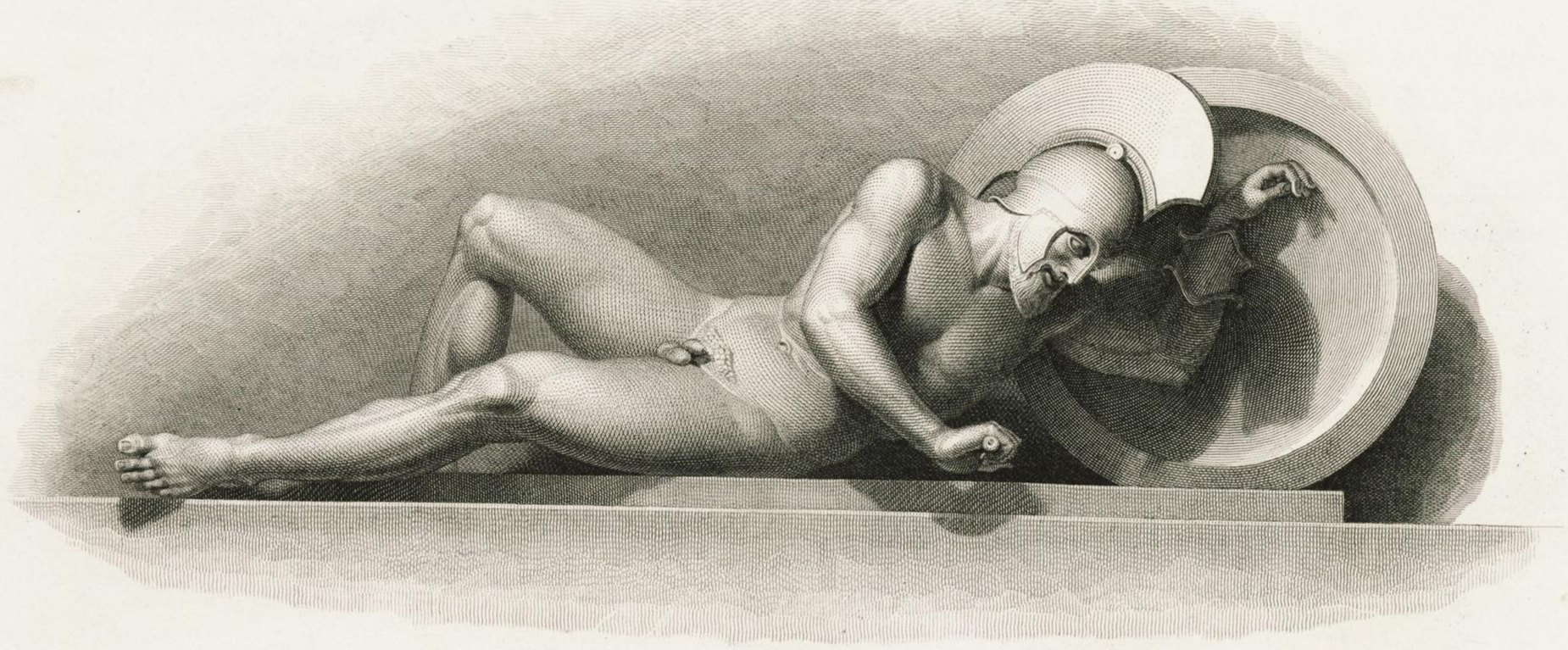
The griffin in Fig. 4, which formed the ornament at the angles of the pediment, was a symbol attributed indifferently to all the Gods—portions enough to explain all the parts, except the head, were found amongst the ruins; one had already been discovered by Chandler: the figure has been restored from the models of Abdera and Teos; it was inserted upon the top of the square plinth, like the other works of statuary, and was of extraordinary elegance of execution and finish. The wings appear to have been gilt. The lion's head, the plinth, and first portion of the cymatium were wrought in one piece, forming the first tile, keyed into the cornice by a dowel.

* Book x. ch. 11.



Site of the Temple in Ægina.

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CHAPTER IV.*

"MINE is no statuary's fame,
Whose art constructs the mimic frame,
For ever standing on the self-same base.
But fly, my song, Ægina's port,
On long-decked ships and cutters short,
To tell that Lampo's valiant son,
Pitheas, the Nemean crown has won,
Whose honours the pancratium's victor grace."

It is thus that Pindar opens his fifth Nemean Ode, as if at Ægina the sculptor's art would occur to every one as the natural competitor of his own. In fact, the scholiast refers to a tradition that the friends of the victor at first proposed to erect a statue to Pitheas, but eventually decided in favour of the poem, which, written upwards of four centuries before our era, has so well made good its promise of conferring on the hero an undying renown.

* The Plate at the head of this chapter is respectfully inscribed to William Watkiss Lloyd, Esq., member of the Dilettanti Society, whose writings on the marbles of the Parthenon are so well known and appreciated, and who has contributed a valuable commentary to this volume on the proportions of the Temples of Ægina and Phygaleia.

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The same allusion to the arts of Ægina may be found in other Odes of Pindar, more especially in the fourth and the eighth Olympic; and the τρόπος τῆς ἐργασίας ὁ Αἰγιναῖος of Pausanias not only designates a school of art acknowledged and celebrated throughout Greece, but implies the writer's recognition of three early schools as conspicuous, the Egyptian, the early Attic, and that of Ægina; to these Strabo adds a fourth, the Etruscan or Tyrrhenian. It cannot be reasonably doubted that the early Attic and Æginetan schools resembled each other in their general character. Athenian writers ascribe the origin of their own to Dædalus, who, they say, lived about 1400 B.C., but the name and date are equally mythical, denoting simply the name of Smith in England or Faber in France.

The school of Ægina was renowned as far back as the sixth and seventh centuries B.C., and was on the decline before that of Athens, under Phidias, came into note. It is more than probable that as Athens owed much of her subsequent fame to the forcible dispersion of the inhabitants of Ægina, so the latter island owed, if not its origin, at least some portion of its celebrity to its intercourse with the Ionian colonies before and during their revolt against Persia. On the whole, it would seem that the Æginetan school was at its zenith from about the middle of the sixth century down to the commencement of the Peloponnesian war. Pausanias enumerates thirteen sculptors * of this school whose merit entitled them to be recorded; and seeing that, Athens only excepted, no other city of Greece produced an equal number of eminent artists, we can scarcely doubt the assertion that Ægina became the manufactory from which idols, penates, commemorative statues, and other

* Their names are as follows:—

1. Smilis, son of Eucledos of Ægina, is stated by Pausanias to have been contemporary with Dædalus of Attica, 1400 B.C., though not equal to Dædalus; to have made the statue of the celebrated Temple of Samos, and to have travelled to Elis, where he also executed the statues of the Seasons of ivory and gold, placed in the Temple of Juno at Olympia (Pausanias, vii. 4; v. 17); but Mr. Heyne and M. Q. de Quincy have justly observed on the anachronisms which these assertions of Pausanias imply.

2. Callon of Ægina, who made the tripod, attached to which was a statue of Proserpine, at Amyclæ, at the end of the Messenian war, about 600 B.C. (Pausanias, iii. 18); also a wooden statue of Minerva Sthenias at Trœzene (i. 22). Pausanias (vii. 18) speaks of another Callon of Ægina contemporary with Canachus, 525 B.C.; not agreeing, however, with the mention of the same name made by Pliny, as an artist flourishing in the 87 Olympiad, 428 B.C. Callon was probably not an uncommon name. Pausanias speaks of Callon the Elean, who made the bronze statue of the Children of the Messenians at Olympia (v. 25); and of another Callon, a pugilist (vi. 12).

3. Glaucias of Ægina (Pausanias, vi. 10), made the statue of the celebrated Glaucus at Olympia, about 500 B.C. Glaucias, was the author of Gelon in a Car at Olympia (vi. 9). Glaucias of Ægina made the statue of Theogenes of Thasos in the altis of Olympia (vi. 12). The statue of Philon, on which was written:

πάτρις μὲν κέρκυρα, φίλων δ' ὄνομ', εἰμὶ δὲ Γλαύκου
υἱος, καὶ νικῶ πὺξ δν' ὀλυμπίαδας.

4. Sinon of Ægina, made a statue of a Horse and Groom at Olympia, in bronze, dedicated by Phormis of Mænales, 490 B.C.

5. Aristonus of Ægina, who made a statue of Jupiter holding an Eagle in his hand, and having a wreath of spring flowers on his head, dedicated by the people of Metapontum. "Neither the master of Aristonus, nor the epoch in which he flourished," says Pausanias, "are known" (v. 22).

6. Anaxagoras of Ægina, 479 B.C., made a statue of Jupiter at Olympia, dedicated by the people of Platæa, after the defeat of Mardonius; the names of all the places whose citizens were present at that battle, amounting to twenty-six, were inscribed on the pedestal. The Æginetans ranked fifth in this honourable list. Pausanias adds, that those who have described the battle have said nothing of this Anaxagoras.

7. Onatas of Ægina, made a statue of Ceres at Phygaleia, and a colossal statue of Apollo at Pergamos, and the statue dedicated by Hieron at Olympia. Also a statue of Hercules, ten cubits high (or fifteen feet one inch), for the Thasians; he flourished about 460 B.C. (Pausanias, viii. 42.) Onatas made a magnificent group of ten statues of the Heroes before Troy who cast lots to accept the challenge of Hector; dedicated by the Acheans to Jupiter at Olympia. In the shield of Idomeneus, Onatas triumphantly inscribes, "These works, with *many others*, the fruit of the labour of Onatas, son of Micon, of Ægina:"

πολλά μεν ἄλλα σοφὸς ποιήματα, καὶ τόδ' Ὀνατᾶ
Ἔργον, ἐν Αἰγίνῃ τὸν τέκε παῖδα Μικῶν.

Onatas executed for the Pheneates a statue of Mercury with a helmet, a tunic, and a mantle, carrying a ram under his arm, at Olympia. "This Onatas the Æginetan," says Pausanias (v. 25), "was an excellent sculptor, and has left many works, and I think him inferior to none of those of the school which derived from Dædalus established at Athens;" a comparison which apparently included the names of Phidias and Alcamenes. "Onatas made a car of bronze, in which is a man, and on either side a horse mounted by boys; these were monuments of Victory in the Olympic Games, obtained by Hieron, whose son Dinomenes, tyrant of Syracuse, dedicated them." (Pausanias, vi. 12). Onatas was contemporary with Hejesias at Athens (Pausanias, viii. 42), and Agelados of Argos.

8. Theopropus of Ægina, 565 B.C., made a statue of a Bull in bronze, an offering of the Corcyreans at Delphi. (Pausanias, x. 9.)

9. Synoon, sculptor of Ægina, is mentioned with honour by Pausanias (vi. 9), in conjunction with—10. Plotichus, his son, who, with—11. Serambus, sculptor of Ægina, also made the statues of Epicradius and Agiadus. 12. Philotimus of Ægina, made the statue of Xenombrotus of Cos, victor in the horse race. 13. About 480 B.C. Ptolichus son of Synoon, who was the disciple of Aristocles of Sicyon, brother of Canachus (525 B.C.), to whom he was hardly inferior in reputation. (Pausanias, vi. 9.) Ptolichus made the statue of Theognetus of Ægina, who obtained the prize for wrestling amongst the youths at Olympia. "I could not discover," says Pausanias, "why he holds in his hand the apple of a cultivated pine; perhaps the Æginetans have some particular tradition on this point;" possibly it might signify the necessity of abstemious habits to acquire the health and strength necessary for such combats, the pine-apple being always considered the emblem of frugality.

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decorations of temples were sent forth through the length and breadth of Greece, forming a staple article of Æginetan commerce. It is singular that, although this important school of the arts had been celebrated by Pausanias * and other ancient writers, no authentic specimens were known † to antiquaries until the discovery of the sculptures of the Temple of Jupiter Panhellenius. The works of Archaic character, hitherto attributed to the Etruscan school, now reveal their true source,‡ and the Fallacy long suspected by Winckelman § is now completely exposed; thus establishing the probability that the works of sculpture discovered in the colonies of Etruria are either works of the mother country, or immediately imitated from them.

But it is not intended here to enlarge on archæological questions, either of history or of art; the object of this work is rather to render a faithful account of these Discoveries, and to furnish accurate materials for the disquisitions of more learned writers. The necessity of such evidence is the more apparent, from the doubtful restoration of some of the statues as they now exist actually in the Museum at Munich, from which restoration the author most reluctantly feels obliged to express his dissent. Present during every operation, watching with zealous and delighted attention every stroke of the excavators, and noting down each successive revelation with line, rule, and compass, he had the advantage of making careful drawings of them all in company with his colleagues in 1811; and subsequently of drawing every piece a second time, while under the care and restoration of Messrs. Wagner and Thorwaldsen, at Rome, five years later—advantages which would go far to warrant him in writing with some confidence.

The grouping of these fragments, scattered as they were among the ruins of the temple and overwhelmed in disorder, must of course be to a great extent hypothetical, even after the most careful study of the positions in which they were severally discovered, and of their relation to the architectural limits of the tympanum. The result, therefore, cannot be positively asserted as conclusive; and accordingly has been variously expressed in the engravings of the Frontispiece, and the two elevations given in the following Plates. These are only to be regarded as so many essays towards a probable conclusion: much, however, though matter of inference, is of a high order of probability, being drawn from the relation of dimensions in the pediment and the statues; and it may be added that the arrangement of the group of the Western Pediment has been accepted by Messrs. Wagner and Thorwaldsen, and by Blouet, Wolfe, Schelling, and other writers who have treated of these sculptures.‖

In contemplating these Archaic works, probably among the best of the Æginetan school, the artist must make allowance for the quaintness of style, and all the other peculiarities belonging to an early stage of the art, and dismiss from his mind all comparison with the later and more splendid efforts of the school of Athens. In using this forbearance, he will find himself amply compensated by the due appreciation of the attainments of art even in that early stage, in composition, expression, and execution—merits founded on the true inspiration of art before it was shackled by rules, and ere mechanical types had superseded that purity of expression and sincerity of purpose which characterise the earliest productions. Such a reader will not fail to discover in these statues a spirit which sought its reward in the praise of freemen, whose institutions made the laurel wreath the highest reward that could be desired.

In the isolated statues which formed these groups and occupied the pediments of the Temple of Zeus Panhellenius, the reader will find an example of workmanship unknown in modern Europe from the second century B.C. down to the researches of Stuart, and more recently of Lord Elgin, at Athens: a species of art far surpassing in expression and effect the Roman system of high or low relief, and in fact possessing nearly all the superior advantages of statuary. In each tympanum an entire subject is represented without constraint. The middle is occupied by the principal figure, which serves also as the centre of action; and the interest gradually diminishes as we approach either extremity. The figures are symmetrically arranged on either side in perfect accordance with

* Book vii. v.

† Select Specimens of Ancient Art, by the Dilettanti Society.

‡ "That erroneous denomination is solely due to those authors who first introduced it to public notice, and who, being Tuscans, were induced, by an unwarrantable spirit of patriotism, to attribute to their ancient countrymen the invention of almost all the arts and sciences: the Etrusco-mania, however, is now completely exposed."—*Milligen's Introduction to Ancient Inedited Monuments.*

§ Vol. ii. 175.

‖ The author feels himself bound to place upon record here his reasons for believing that the Eastern and Western Pediments contained each thirteen figures, and not eleven only, as in the restorations at Munich. In the first place, the fragments of no less than thirty distinct statues were found; which would be too many for that hypothesis. The hexastyle Temple at Tegea has thirteen figures on the pediment, and it is not to be supposed that the octastyle Temple of Panhellenian Jove would have been adorned with a smaller number. The discovery of the fragments of so many figures is a strong confirmation of the author's opinion, as to the necessity of thirteen statues, at the least, to give completion to the artistic grouping in either pediment.

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the architecture, and with a gradual and harmonious succession of objects.* In the execution, we cannot but admire the enthusiasm with which the artist has laboured, completing even those parts which the eye could never reach in isolated and individual statues, and balancing them on their own limbs on plinths, by their natural equilibrium, and without any of those props or helps which, however permitted by convention, are nevertheless unsightly, and destructive of the true effects of statuary. Attached to a plinth, which was let into the upper surface of the cornice and run with lead, the statues were mostly cut out of one entire block with a surprising power of execution. The shields, not more than $\frac{3}{4}$ of an inch in the thickest part, are wrought in the solid, together with the whole figure. Not a single evidence of artificial support was discovered in the Western Pediment, and in the Eastern, only one foot had a solid part from the plinth carried up a little above the ankle for this purpose. The boldness of such execution is surprising. The curls of hair were in lead (of which specimens were found in the course of our excavations), the Gorgon's head, the serpents of the ægis, the bows and arrows, the quivers, the lophos, and the cheekpieces, were for the most part separate and subsequently attached.†

The figures themselves are full of those characteristics which are noted by writers on early works of art, such as the energetic squareness of the attitudes, the largeness of the head, the robust limbs, the trim hair,‡ the hollow cheek, the long and square chin, the angular profile, the short neck, and last, not least, the gallant smile about the mouth.§ The extreme stiffness and regularity of the drapery may have been considered as proper to the sanctity of the demi-gods represented, and as suited to the squareness and mechanical regularity of architecture; but doubtless it was also in a great measure conventional, and was generally employed in sculptures which bore reference to the deities.‖

In Attica, the earliest sculpture of ascertained date is that of the Temple of Theseus, which we know to have been built 456 B.C., twenty-five years before the dispersion of the Æginetans. On comparing the sculpture of that temple with the statues of which we are now treating, we find much difference in taste and in execution; the Athenian sculptures being marked by freedom of style, both in conception and execution, whilst in those of Ægina all is comparatively formal and conventional, the utmost precision being observed in every article of costume, with an extraordinary minuteness of execution; but these differences need not surprise us when we consider the political rivalry of the two countries, and doubtless of the two schools no less.

But it is time to pass from these general remarks to a more particular description of the statues themselves, on which the author feels that it is his duty, as the only survivor of the party of antiquarian and professional friends who explored the ruins of the temple in 1811, to offer a few remarks in detail. These statues have been restored at Rome in Parian marble, in such a way as to disguise the fractures of the original, and possibly the attitudes and motives of the figures themselves: heads, helmets, and limbs have been supplied, without sufficient authority (in the author's opinion,) and doubtless their character has suffered in consequence of what, with all respect for the talents of such distinguished artists, he must call arbitrary assumptions—a liberty happily restrained in our Athenian collections in England. It is of great importance, he conceives, that these points should be noted by one of the discoverers, and that reasonable doubts should be suggested with a view to safer conclusions.

It has always been hoped that the illustrious possessor of these marbles would encourage a more complete

* From Pliny, xxxvi. 5, it would seem that this practice was not uncommon in the classical ages. At all events, he tells us that the works of Bupalas and Anthermus, who flourished at the same period, were placed by Augustus in several of the pediments in the Palatine.

† The figure No. 3 is cut with the whole shield in the solid. No. 4 had the shield also cut in the solid, and was equally balanced in equilibrium. No. 5 had the shield in a separate piece. Nos. 6 and 7 were also supported in equilibrium, and the curls in front of both these, and of No. 3, under the helmet and cap, were in lead, attached subsequently, as were also the top of the cap and the ear-pieces.

‡ This is remarked by Pliny as the defect of Myro. See xxxiv. 8.

§ These peculiarities are simply a reproduction in marble of the established military traditions of Dorian soldiership. It was customary with the Dorian Greeks to dress their hair elaborately before entering on the fight, as we learn from the story of Leonidas at Thermopylæ. The Homeric expression for the battle is χάρμη, a derivative of the verb χαίρειν, which signifies to rejoice, and implies that the smile, if not a part of the established military demeanour in action, was the result of a spontaneous feeling which renders it more natural and appropriate, reminding us of the "merry men" who drew English bows against desperate odds at Agincourt. It is worthy of remark, that Homer on one occasion (Il. vii. 241) expresses the act of fighting on foot by the bold metaphor of μέλπεσθαι Ἄρηϊ, to dance a war-dance before Ares; and that one and the same word, κόσμος, not only is applied to the decking of the hair, but denotes the Dorian constitution, the Dorian dance, and the Dorian battle-array.

‖ The custom probably is as old as the time of the Chaldeans, who are described in the book of Baruch (ch. vi.) as spoiling the images of the Gods to adorn their women and children.

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publication on this interesting subject, ere these criticisms are lost. Nothing of the kind, however, has been done in this matter, except the publication by the French Commission in 1835.

The Subjects of these groups can be no other than the actions of the Æacidæ. On this head the warlike character and attitudes of the figures themselves, and the dedication of the temple to their great progenitor, leave no room for doubting that they refer to those heroes of whose praise, as Pindar says, "the world is full," and whose glories he delights to sing in every ode addressed to the Æginetans. But the particular actions to which they refer, owing to the paucity of the fragments (more especially of the Eastern Pediment) rescued in the course of our excavations, may offer matter of discussion.

Even reasoning on mere *à priori* grounds, there is every probability that these sculptures would refer to the great actions in which the Æacidæ, and, indeed, the whole of Greece, were concerned; the first and second sieges of Troy. In the former Telamon accompanied Hercules when he defeated Laomedon, carrying off Hesione as his bride—an act which was avenged by the rape of Helen, and led to the second expedition immortalised in the song of Homer.

Of the Eastern Pediment (Plate XIII.)—unfortunately in a less perfect state of preservation, and yet of finer sculpture, than the Western—we have the head of a Minerva, and a hand grasping the ægis: the statue must have been of large dimension, and doubtless occupied the centre. We have a smaller female head crowned with roses, and of such a dimension as would suit Hesione. We have a Hercules marked by his casque of lion's skin, (No. 5); (No. 4) a fallen and mature personage;* (No. 3) a myrmidon, in the act of withdrawing a wounded hero;† (No. 2) a magnificent torso; and (No. 1)‡ a fallen hero, restored in a manner to which there is the strongest objection. We have also the legs and feet of an archer clothed in anaxyrides, like the archer in the Western Pediment; and a variety of heads and fragments. To assign names to these would be entirely presumptuous; but the idea of the learned has always been that they applied to the early siege of Troy by Hercules. It is remarkable that most of these have greaves.§

The group of figures which belonged to the Western Pediment was by far the more complete of the two, the statues of the Eastern Pediment having been much more exposed, owing to the inclined pathway, as well as the breadth of the platform in its front—a fact the more to be regretted, because the eastern was evidently the work of a far more accomplished master than the western. It has been admitted by Messrs. Thorwaldsen and Wagner in Rome, as well as by the original discoverers on the spot, that fragments of at least thirty figures in all have been recovered: and every consideration goes to confirm the belief that, exclusive of the four figures of the central acroteria, each pediment was adorned with a group of thirteen statues. The composition of each pediment seems to have been made on the same system, as best suited to the character and dimensions of the space at command. The grouping is admirably calculated to disguise the great difficulty arising from the triangular form of the pediment, which makes the centre so disproportioned to the angles, and to give the idea of equality in size, in a natural manner. Thus the excessive height of the central deity is most happily disguised by the figure prostrate at her feet, while the bending combatants on either side lend their aid to the artifice of the composition. The remaining figures take up their position in a varied uniformity, while the prostrate figures at the angles terminate the composition on either side in a manner most pleasing to the eye. Thus the two sides balance in attitude and in quantity; and their variety, instead of breaking the regularity and unity of the entire conception, is made to assist it by interesting novelty.

The subject of the Western Pediment (Plate XIV.) is evidently the combat of Patroclus and Hector, as related in the 18th Book of the Iliad. The Telamonian Ajax defends him, assisted by Teucer and Ajax Oileus. To the left is Hector, who has felled him to the ground; and Hippolytus is about to strike the fatal blow. Paris is clearly distinguished behind them. To the right and left are two personages, who, from the nobility of their forms and the fillets on their heads,—always an attribute of sacred personages—may be supposed to be the rivers

* Engraved at the head of this chapter.

† The feet and legs of a corresponding figure were found in the West Pediment.

‡ The head, the arms, and the legs below the knees are restored. The diameter of the shield exceeds the width of the cornice, and would overhang its face. The hollow of the shield would be a receptacle for water; from below the eye would lose much of the beauty of the sculpture, which is remarkable. In this figure, the position or attitude composes ill with the group. The exposed and undefended surface of the figure, still in the act of offence, in the uplifted spear, is also most irrational. It is probable that this figure had a general resemblance with the corresponding figure in the centre of the Western Pediment.

§ Observations on the restorations are marked on the Plates to the accompanying sheets.

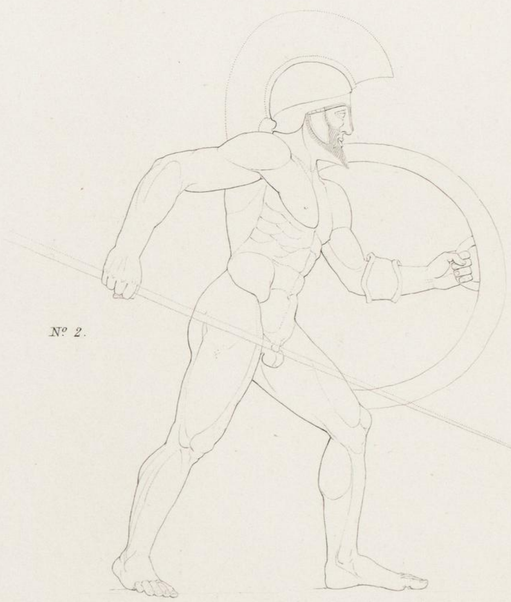
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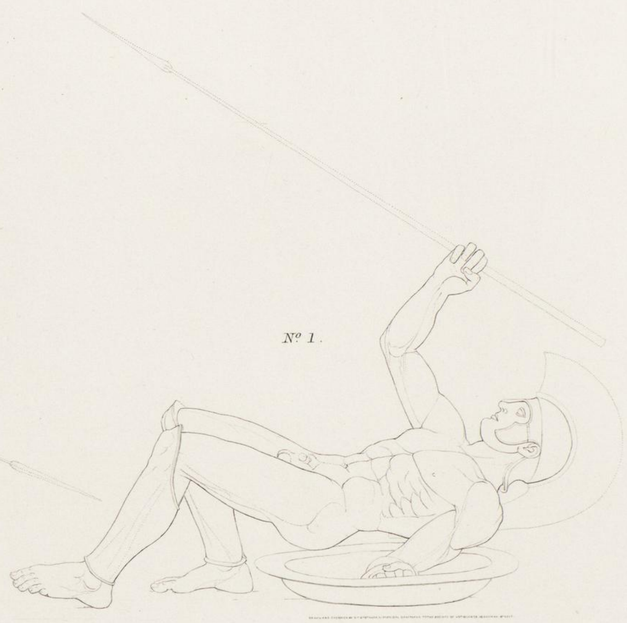
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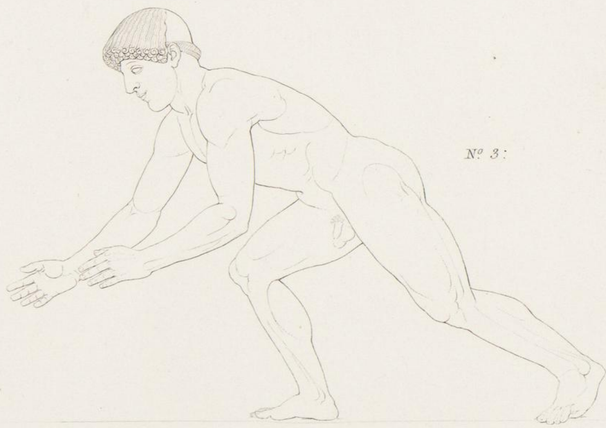
№ 5.



№ 2.



№ 1.



№ 3.

№1. The head, arms and shield, and the legs below the knees restored.
№2. The head, arms and shield, and the legs below the knees restored.
№3. The hands and feet restored.

№4. The legs below the knees restored.
№5. The hands and left leg below the knees restored.

12 9 6 3 0 1 2 3 4 5 Feet

FIGURES FROM THE EASTERN FRONT OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

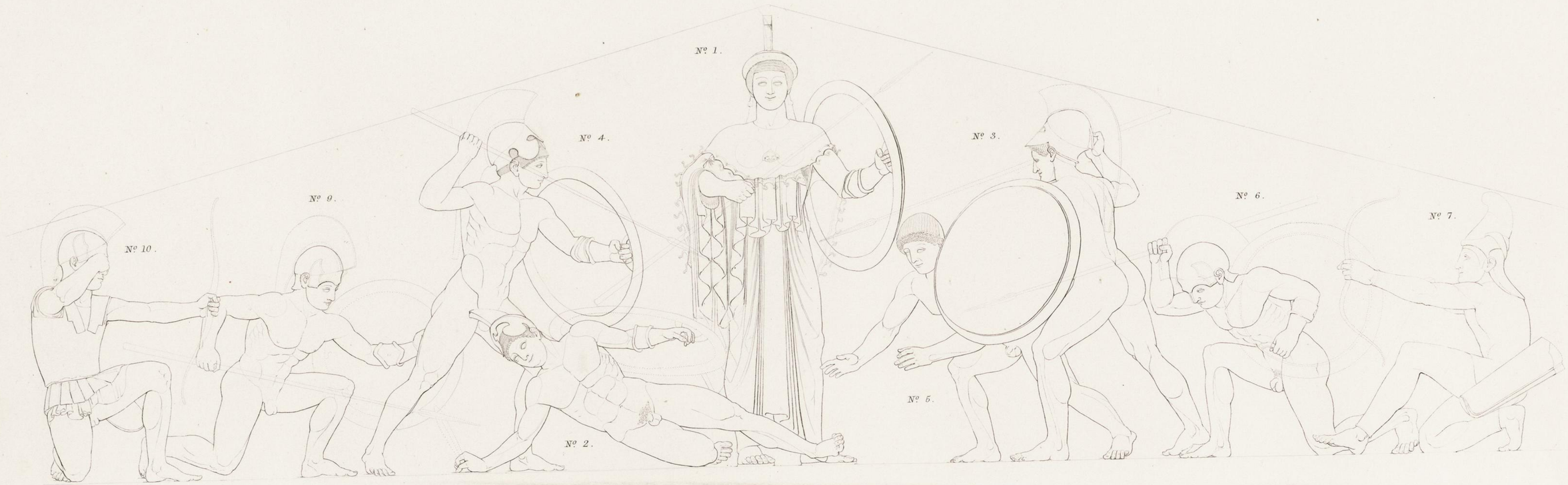
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12 9 6 3 0 1 2 3 4 5 Feet

№ 1. The right hand restored.
2. The Shield restored.
3. The right hand and shield, and the legs restored.
4. The head and right hand and legs below the knee restored.
5. The feet and legs only discovered the head arms and body restored
6. The head the right hand and the legs below the knee restored.

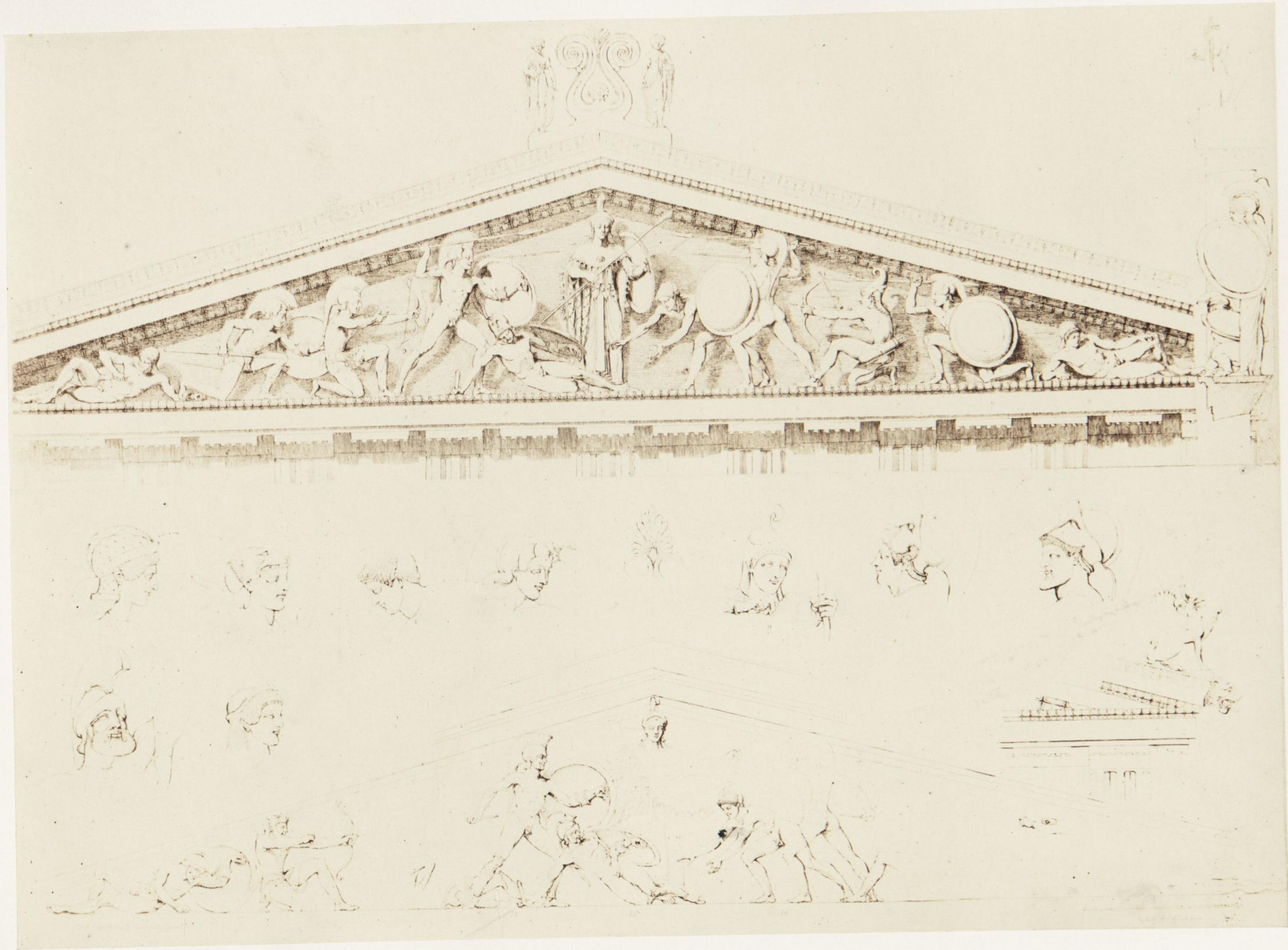
№ 7. Part of the feet only discovered.
8. The legs below the knee restored.
9. The head and hand the shield and the feet restored.
10. The head the arrow and legs below the knee restored.
11. The feet and ankles restored.

ELEVEN FIGURES FROM THE WESTERN FRONT OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

THE GROUPING RESTORED BY C.R.C.

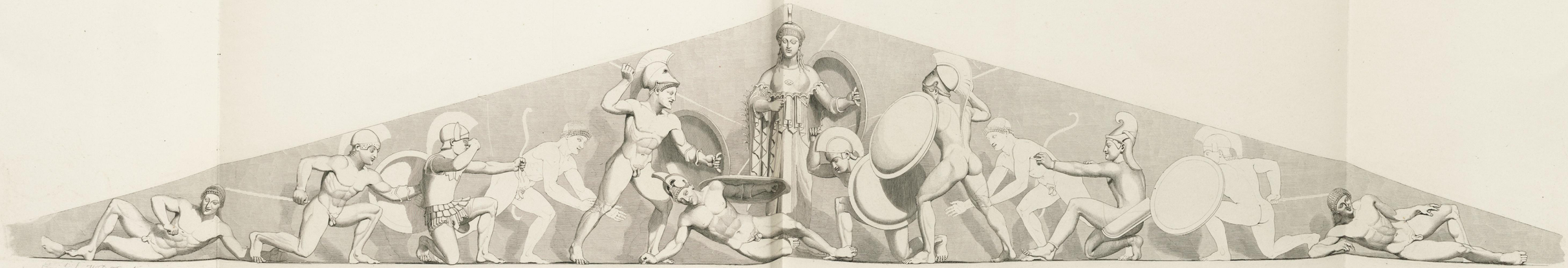
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EAST & WEST PEDIMENTS OF THE TEMPLE OF JUPITER PANHELLENIUS AT ÆGINA.

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ENTIRE WESTERN PEDIMENT OF THE TEMPLE OF JUPITER PANHELLENIUS IN ÆGINA.

THE GROUPING PROPOSED BY C.R.C.

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Simois and Scamander, described as wounded in their interference in favour of the Trojan Force. In the midst stands Minerva (the Phœnix of Homer), putting an end to the combat. The artist has introduced this figure as necessary to the intelligence and composition of the group; and it will be remarked that the attitude and expression approach those of an idol, whilst the others seem alive. The fragments of a figure, in the action of obvious endeavour to draw away the fallen hero, were found below, and these leave us little room to doubt the general resemblance of the groups of the Western and Eastern Pediments.

With respect to arms and dress, it is interesting to remark that, as suited to the Æacidæ, the Æginetan artists seem to have strictly adhered to the received traditional notions respecting every particular which was deemed admissible without injury to the work. We do not see here the armour worn by the Greeks of Ægina in the fifth century B.C., but that which was conventionally accepted by the learned of that day as used at the siege of Troy. The general resemblance of this group and of the costumes, to subjects painted on the most Archaic vases is remarkable; they have that pugnacity of expression which indicates an age when military heroism was the beau ideal of excellence; in contradistinction to the subsequent ages of Greece, presenting us subjects generally of a peaceful, and often of a voluptuous character.

The dresses of the statues are composed of the same number of pieces. Thus, the Minerva has a helmet of the antiuqe form, found on early Athenian medals; unlike the style of Phidias, or that found on sculptures and coins of a later date. It was painted with chequers of beads. The hair is dressed in a peculiar form; the ears were pierced for earrings; three tresses on either side, terminated on the breast; possibly of lead; as were probably also the Gorgon's head, and the tassels or serpent's heads which formed the fringe of the ægis. The latter is oval in shape, and has literally the leathern appearance of the inside of a goat's-skin; it was painted all over with gilded scales. A shift, of fine elastic texture, appears on the arms and elbows, hanging down in large sleeves; this is covered with a tunic, having a broad plait, with three smaller ones on either side, giving free action to the ancles and feet; with sandals upon them, whilst the feet of the other figures are bare. The figures are mostly naked, the helmet belonging to each is different. That of Patroclus (No. 2), as borrowed from Achilles, is most elegant in form, the work attributed to Vulcan. The cheek-pieces, and the piece which protected the nose, when drawn down, were suited to defence, and when drawn up, must have added to the effect; the hair is curled in front, and behind is bound up with a fillet, under which the long hair at the back is gracefully folded.* In the Ajax (No. 3) there is a helmet less perfect in form and in workmanship: also capable of being drawn down; the hair is curled in front, and leaden curls were attached behind. Another helmet fits close to the head, whilst two side pieces turn on a sort of hinge, sometimes put up, and often upon the cheek. These were wrought in separate pieces and inserted afterwards, so that they could not appear of the same material as the face, the separation being evident. This is remarkable in the heads of the eastern pediments (Nos. 4 and 5), and was a principle always observed. The lances, swords, and belts were of some other and more perishable material, not found; but the discovery of small bronze fastenings upon the spot suggests that these were probably of bronze. The quiver is worthy of remark for its capacity: the holes into which the arrow heads were fastened are still visible. The length of the quiver agrees closely with the specimens sculptured at Persepolis, as also do the curls, and the manner in which the dresses are plaited.

The Figure No. 7 is clothed with anaxyrides, a tight leathern dress, reaching down to the ancles, with a waistcoat finishing over the thighs. The cap, the κυρβασία, attributed to all oriental characters, comes over the shoulders in a broad lap: in the front and at the back were leaden curls; the dress itself was painted with gilded scales. The position of the fingers is singular; the bow-string is drawn back by the second finger, whilst the arrow is held between the first finger and thumb; the other hand, which grasps the bow, shows the pressure of the latter against the palm of the hand. The shields, when found, showed traces of having been painted red inside and partly so outside: † on one in the Eastern Front was discovered the figure of a nymph in low relief—possibly Œnone or Ægina.

* The repetition of this helmet by the restorer, on the figure No. 4, is without any authority, and lessens the character and pre-eminence of the Patroclus and of the casque of Vulcan.

† The model of the temple exhibited in the museum at Munich displays a variety of colouring both of the architecture and sculpture which the original excavators did not discover, and which are, therefore, not admitted into this work. A comparison of the plates, No. VI. VII. and IX. will show these variations; especially the latter, No. IX, in which the painted scroll in the interior of the portico has been erroneously placed (in the model, and adopted in the "Expédition scientifique de Morée" from that model) upon the corona of the external entablature.

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The κνημῖδες or greaves occur only on the Eastern Pediment, their finish at the knees and ankles exhibit a beautiful accuracy and adaptation to the form, and have the appearance of a well-worn defence, adapting itself to all the movements that could be required. The pendant curls of the two dying warriors (Nos. 8 and 11) terminate at the sides in three tresses, denoting sacred personages; as we should infer from the fact that they are given also to Minerva, and to the figures over the frontispiece, but to no others. Over the back of these figures the hair hangs in great length and fulness. The wounds are palpable, and have the appearance of being caused by arrows.

The Hercules in the Eastern Pediment is clothed in a leathern jacket of one piece, composed of five thicknesses, each of which is attached by a thong. The outer one is plainly shown under the left arm, where the opening is closed with ties. The holes only, by which they were attached, are now apparent. This jacket has two straps coming over the shoulder, tied in the same manner upon the breast. One of these straps Alcides has loosened, that he may be less constrained in the fatal action in which he is engaged. The lower part over the thighs is cut into thongs, appended to each of the thicknesses; under all is a shirt, which appears under the arms and again below on the thighs. The same dress is given to the Teucer on the West Pediment, though an equal number of thicknesses does not appear. The shirt of the latter is disposed in uniform plaits, like those of the Minerva. It is, however, remarkable that both in the shirt of the Hercules and in the fragment of the arm of Minerva belonging to the Eastern Pediment, we discover a flowing style denoting a growing departure from the rigour observed in the sculpture of the Western Pediment. Pausanias* describes an upper coat (γυάλη) fastened at the sides, with which the combatants might fearlessly enter into battle without shields. All those figures which are armed with a leathern jacket, such as that above described, appear to have been archers, not bearing the shield.

The mechanical execution of these remarkable works in a material so friable as the marble of Paros, is worthy of particular study. Their small elevation above the platform allowed the spectator to appreciate every delicacy of finish. The effect was still further enhanced by the application of painting in encaustic and gold, uniting the sculpture with the polychromatic architecture. The tympanum was light-blue, the bed-moulding and beak-moulding of the cornice were red, white, and green, apparently picked out with lines of gold. The cymatium, already noticed, was also coloured in encaustic. The weather had corroded the surface of the Parian marble in those parts which were not covered with colour, so that the ornament is actually in relief presenting the high polish of the original surface.

The architecture thus enriched, required the presence of colour no less on the surface of the sculptures; as may be understood in Plate No. 6, conferring the requisite distinctions and interest, but avoiding the gross and ineffectual attempt at the illusion of life. Thus, the hair, the lips, and the pupils of the eyes appear to have been slightly coloured, while the rest of the skin was left untouched; the arms and costumes were decorated; the shields were painted red internally; the several helmets were covered with elaborate ornaments, and the dress of Paris with scales, apparently gilded. Metals also contributed their share; the bows and other arms, of which traces were visible in several of the hands, were probably of bronze; the fact that none were discovered may be easily accounted for, by the intrinsic value of the metal, which attracted spoilers either at the time of, or subsequent to, the catastrophe which levelled the sculptures to the ground; several curls of the baser material (lead) were found upon the spot as already stated.

The physiognomy of these statues is most remarkable, having much in common with the colossal heads of the giants at Agrigentum, and with various archaic figures in the museums of Europe, as if following a primeval and conventional type,† while the form and anatomical expression of the figure is free from all conventionality. The Hercules, and recumbent figure in the Eastern Pediment, are pre-eminent for their more bold and masterly design and execution. In all, the Æginetan school is exhibited in a most distinct and admirable manner, and these works convey perhaps more than any other school in Greece, a true idea of that Homeric style which seems in so remarkable a manner to have arrested the attention of the ancient critics.‡

These are some of the notices on the Iconography of this remarkable Temple, which, together with those

* Book x. ch. 26.

† Examples of this type will be found in "Specimens of Antient Sculpture, Egyptian, Etruscan, Greek, and Roman," published under the auspices of the Dilettanti Society in 1809.

‡ See the description of the group of the heroes before Troy by Pausanias. Lib. v. ch. xxv.

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appended to the Plates Nos. 14, 15, and 16, may enable the architect to appreciate this splendid monument. At the same time that the restorations of the sculptures as they now exist, in the Gallery of Munich, may be subjected to further criticism by these observations of a lover and eye witness of their discovery.

For the sculptor and the archæologist a field of the highest interest, scarcely yet explored, is still open, in favour not only of the peculiar merits of the τρόπος τῆς ἐργασίας ὁ Αἰγιναιὸς, but also of the character, the incidents, and the mode of warfare described by the Prince of Poets; and the lover of Homer will find explanations which no previous discoveries have revealed.

The public is greatly indebted to the French authorities for most of what has hitherto appeared* on this interesting subject, and is still waiting with impatience for those more elaborate illustrations which the learned people amongst whom they are deposited, are so highly qualified to give us.

In Plate XV. another composition is essayed, showing thirteen figures.

* Expédition scientifique de Morée, vol. iii.

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CHAPTER V.

TEMPLE OF MINERVA AT THE PORT.

Viewing the two columns of the Temple remaining in 1812, from the elevated side of the city, not far from the Stadium and Theatre, we see the Island of Pityonessus to the right, and the Promontory of Methona to the left : in the middle are the distant hills of Epidauria.

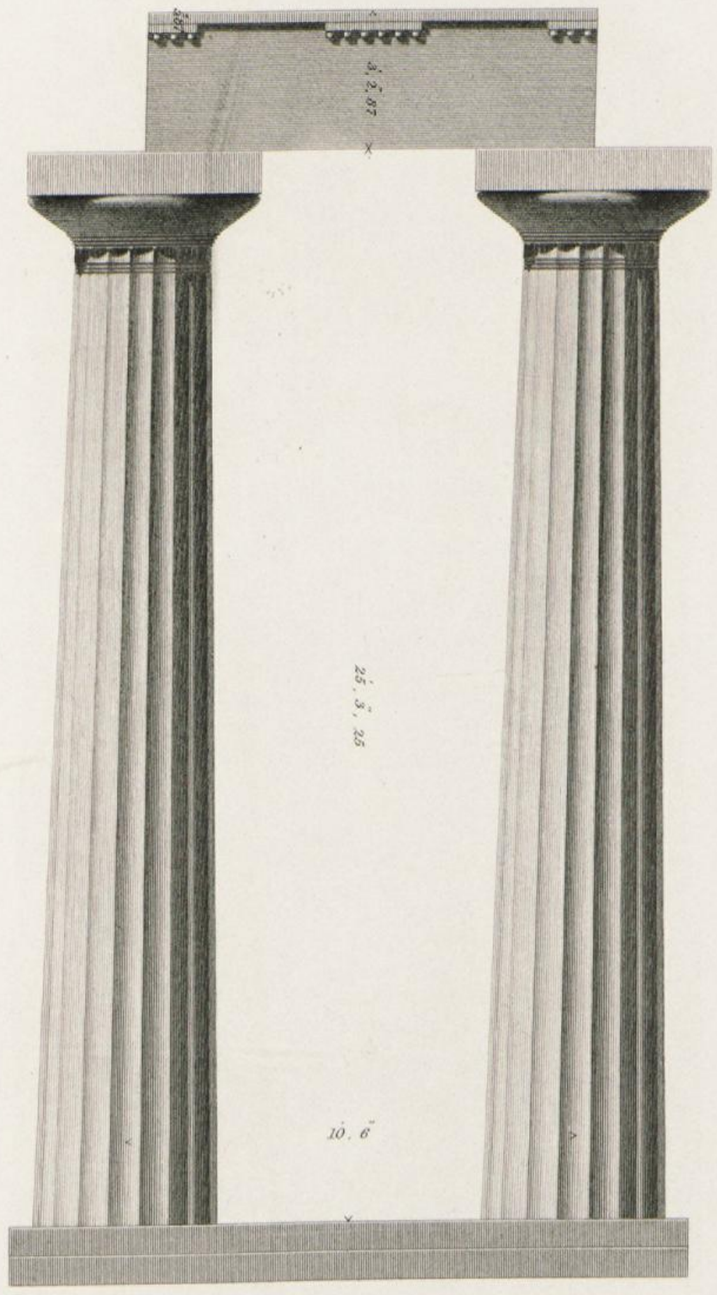
The elevation on which the Temple was raised is in great measure artificial, and formed the Acropolis overhanging the sea ; in 1832 it became a quarry for the materials of the new town, as stated in the Expédition scientifique de Morée, vol. iii.

In the second volume of the work on Ionian Antiquities, Chandler has published a view of these columns, supposed by him to belong to the Temple of Venus ; the measurements, however, are not given by him, and, as the proportions of the column have been exceedingly admired by travellers, it became an important object to obtain them accurately ; but this was not accomplished without great difficulty, since the village at that time could hardly furnish either the skill or the material to make a sufficient ladder. The shafts are monolithic, and without the entasis, and proved on examination to be those of the posticum at the west end of the Temple ; but no vestige was found of the antæ or walls of the cella, or indeed of any other part of the Temple, except the foundations of the western portico, which were traced to the depth of twelve feet. They are of a very interesting construction, and are interspersed with rubble-work, and abundance of mortar : the chippings of the original stone made at the building of the Temple were found interspersed with charcoal and the bones of animals, probably of the sacrifices with which the Deity had been propitiated in the progress of the building.

On removing the ground at the base of the columns, to ascertain their original destination, a beautiful female foot * was discovered, of such delicate finish and execution that four thicknesses composing the sole of the sandal were distinctly seen. There seemed to be little doubt that another collection of marbles would result from the extension of this excavation, and the highest expectations were accordingly raised. A bargain was struck with the archons of the town, by which the excavator was to defray the expenses, and they were to share the fruit of this labour. After a week's work, and the employment of a great number of hands, it appeared that in building the fortress of Napoli di Romania, the Venetians had not only transported the columns and fragments of the Temple, but had excavated even the foundations ; a fact which some of the oldest of our labourers were ready enough to declare from the tradition of their ancestors ; though not until they had tired the patience of their employers, and saw no prospects of continuing a profitable engagement. They had always understood, also, that these two columns had been spared as a landmark for the navigation of those seas. Nor can it be doubted that other fragments of sculpture must have existed among the ruins, and had been regarded with that indifference shown by the Venetians in matters relating to classical antiquity, on other occasions.

* This foot, the property of the author, who was alone in this expedition, was presented by him to H. R. H. the Crown Prince of Bavaria, as essentially belonging to the Æginetan school of art, of which the marbles of the Panhellenium, already deposited at Munich, afford such complete specimens.

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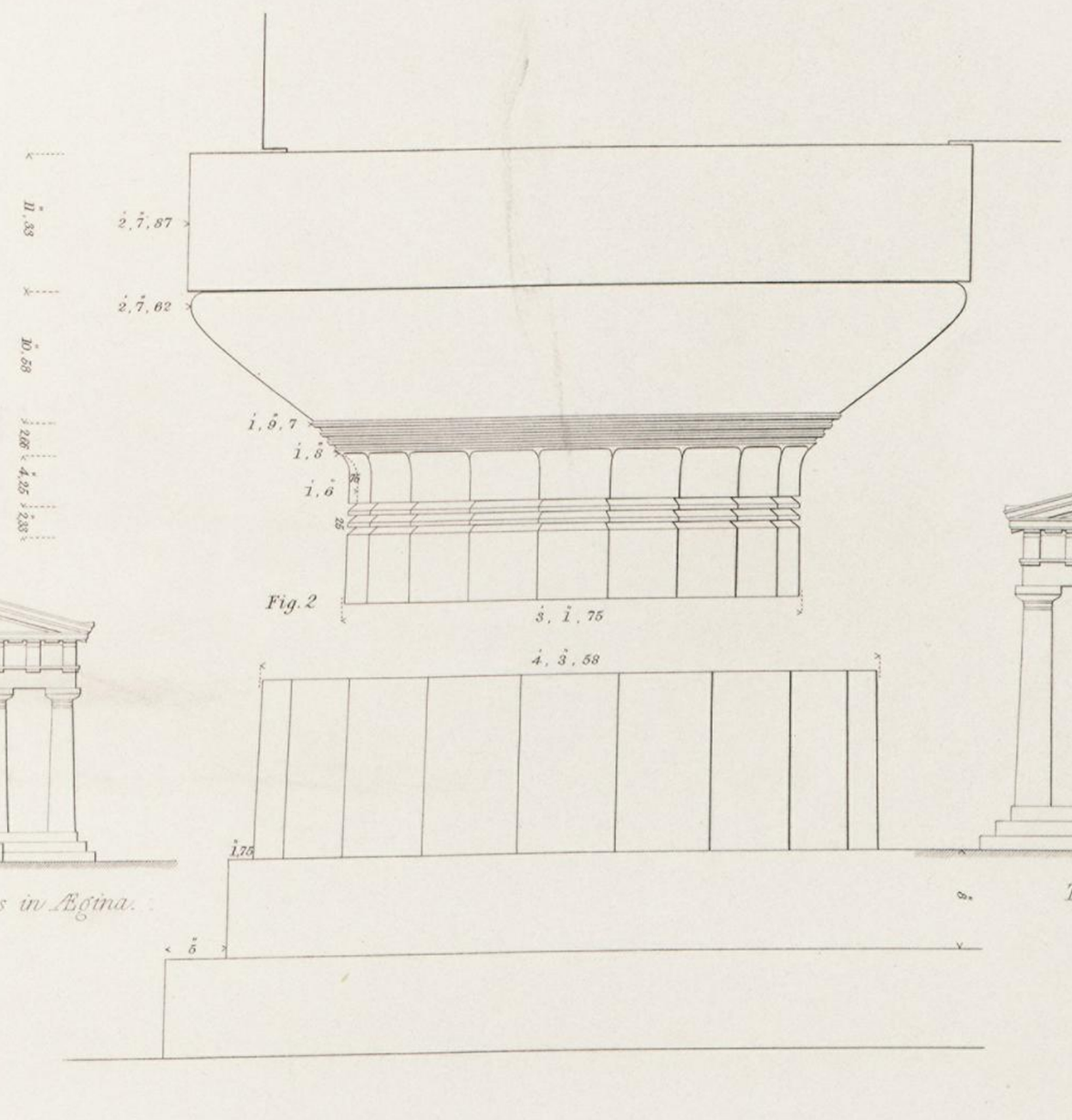


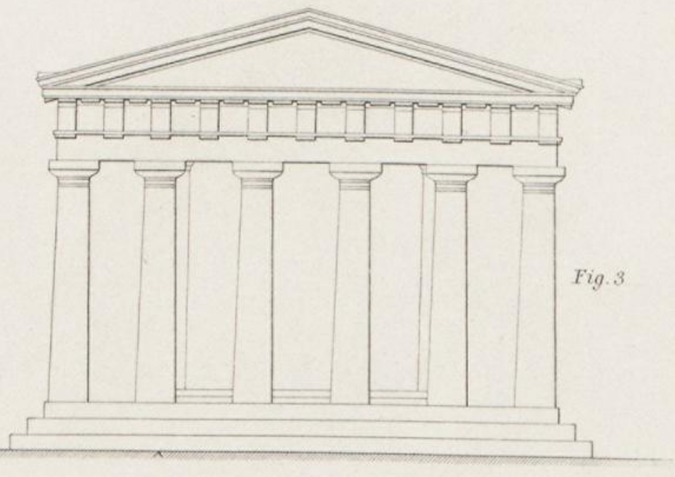
Fig. 1



Temple of Jupiter Panhellenius in Ægina.

Fig. 2

Fig. 3



Temple of Minerva at the Port.

ELEVATION AND DETAILS OF THE TEMPLE OF MINERVA AT THE PORT OF ÆGINA &c.

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Chandler has called these ruins the remains of a Temple of Venus, without any other ground for so doing than the fact of their standing near the "most frequented" Port, and without any reference to the secret ports, or the citadel; of which he makes no mention, and which, indeed, he appears never to have examined with care. The modern Greek Churches, which were always erected on the sites of former temples, are seen in the plan of the city close to the port, and it is most probable that one of these was the Temple of Venus.

Herodotus * speaks of a Temple of Minerva in which the prows of Samian vessels taken by the Æginetans were suspended as a trophy. Pausanias makes no mention of a Temple of Minerva, which being in the Citadel, he perhaps may not have been admitted to see. The magnitude of the order and its position give plausibility to the title here proposed.

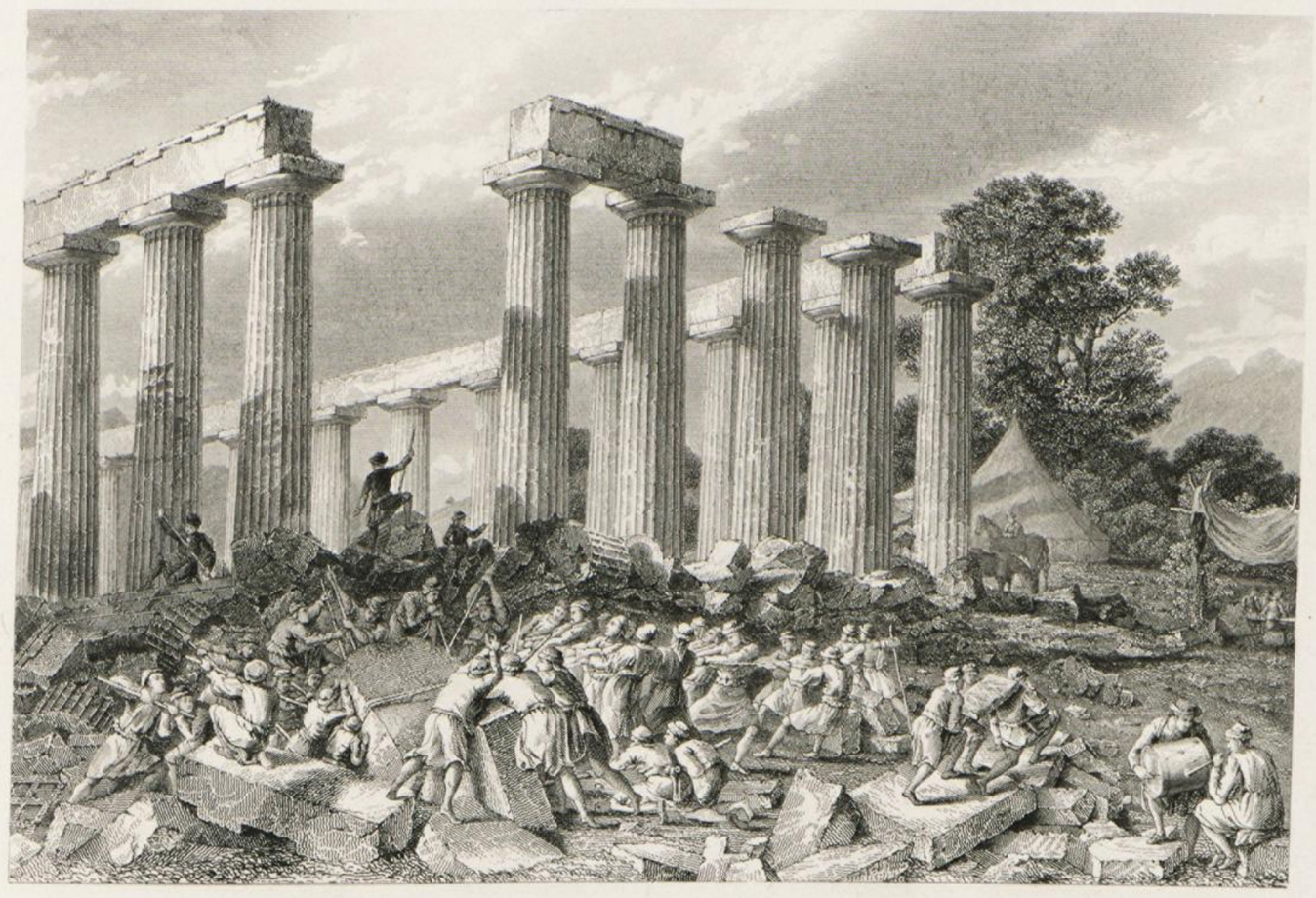
The attempt at the restoration of this Temple in Plate XVIII. is made more or less conjecturally from the two columns of the Posticum, which appear to indicate proportions far more lofty than those of the Panhellenium; a circumstance to be accounted for not only from its importance, but also by the necessity of heightening the proportions of a temple within the city, and standing in immediate contrast to the surrounding buildings. We have seen that great pains were taken to give due elevation to the foundation of the edifice, and in its proportions the same idea would seem to have prevailed; and although this position might possibly lead us to ascribe to it a more recent date, for the reasons already assigned, yet the character of the cap and the hypotrachelion, and, above all, the absence of the entasis, leave no reasonable doubt of its antiquity.

* Herodotus, Thalia, par. LLX.

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TO THE

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THIS WORK ON THE ANTIQUITIES

OF THE

TEMPLE OF APOLLO EPICURIUS,

AT BASSÆ.

IS RESPECTFULLY DEDICATED

BY THEIR OBEDIENT AND HUMBLE SERVANT,

C. R. COCKERELL.

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PHIGALEIA.

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ERRATA.

Page 48, *for* "Depth of jamb, 4′ 5″ ·75," *read* "Depth of jamb, 4′ 5″ ·0."

„ 58, *for* "fig. Q.," *read* "fig. 4."

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PHIGALEIA.

PREFACE.

It may be easily imagined that the previous success of the Travellers at Ægina was well calculated to excite them to new enterprises; one of which in particular, the exploration of the Temple of Apollo Epicurius in Arcadia, had been in frequent contemplation.

This Temple had been known for some years by the cursory visits of former travellers; but the remoteness of the site, and the dangers arising from malaria, and especially from the Kleftes, the lawless bandits of Arcadia,* had hitherto discouraged both English and continental travellers from undertaking any deliberate investigations into its style and structure. The interesting facts recorded by Pausanias,† that the Temple had been designed by Ictinus, the eminent architect and fellow-labourer with Phidias in the building of the Parthenon of Athens, and that, next to the Temple at Tegea, it had always been esteemed the most beautiful in the entire Peloponnesus, were sufficient reasons to assure them of the importance of the investigation.

To these labours they accordingly determined to direct their best energies, and furnishing themselves with the means of encountering the threatened dangers, such as arms and guards, together with a tent and some culinary apparatus, they started from Zante early in July, 1811, after having deposited the Æginetan marbles in that place of safety.

From the little port of Pyrgo opposite to Zante, Baron Haller, Herr Lynck, and Messrs. Foster and the Editor, traversed Elis and part of Arcadia, and arrived in a fine afternoon at Andritzena, the nearest village to their appointed destination, where they had arranged to pass the night. On the side of a deep declivity, the houses rising one above another amidst gardens and woodland scenery, the oak, the platanus, and the cyprus; this romantic site presented picturesque attractions wholly irresistible to artists, and they remained to sketch while their attendants moved forward to obtain a lodging for them. They had not long been so employed before a troop of young Arcadians, with baskets of fruit and flowers, were seen running towards them with these offerings of welcome. Thus the scene was invested with a moral beauty in addition to the charms with which it was endowed by nature, and the Poet's dream of this favoured region was realised to the imaginations of the Travellers.

* Monsieur Poqueville in his *Voyage en Morée* in 1798, relates that a French architect, Mons. Bocher, visiting the Temple of Apollo from Caritena in 1770, was murdered by the Lalliotes.

† Arcad., ch. xli. "Of all the Temples in the Peloponnesus, after that of Tegea, this Temple is the most admired for the beauty of the marble and the harmony of the proportions."

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On the following day they proceeded to the Temple "στοὺς στύλους" as it is now called, where they pitched their tent under the ruins ; enjoying during ten days, on the lofty ridge of Mount Cotylium, an atmosphere unknown at that season in the sultry plains below, amongst views of surpassing historical interest and natural splendour.

Commencing our investigations with all diligence, and assisted by the shepherds of the neighbourhood, we soon removed the chief incumbrances ; sufficiently to reveal undoubted evidence of the buried treasures, both of sculpture and architecture. But the fame of these operations quickly spread amongst the surrounding villages, and their Vaivodes lost no time in issuing their formal protest against further operations, until the sanction of the Vizier at Tripolizza, the seat of government in the Morea, had been obtained.

The completion of these delightful labours was thus deferred until the following year (1812), when negotiations were undertaken by which the Vizier's consent was given, but only on the condition that half the proceeds, as the lion's share, should be secured to him. The little company of adventurers was increased to six in number by the addition of Messrs. Leigh, the English traveller, and Gropius, the Austrian Consul at Athens, as the interested parties in the undertaking. They had also the society of the accomplished Baron Stackelberg, of Esthonia, and the Chevalier Bronstedt, of Copenhagen, who, with others attached to them, made a party of fifteen persons, during a residence of three months on the spot. From fifty to eighty labourers were employed in the excavations. Their tent and the huts reared for the occasion, and covered with branches of oak, quickly assumed the aspect of a little village, not inaptly called Francopolis.

The inspiring aid of music, equally necessary to the Greek in this operation, as in the rebuilding of the ancient Messene by Epaminondas, was never wanting, though the flutes of the Bœotians and the Argives, to the celebrated airs of Sacadas and Pronomus,* were ill supplied by the rustic pipes and the viols of the modern Arcadians, who, however, did their best. These pastimes, the bivouac, the bonfire of aromatic shrubs, the lambs and kids roasted entire, the generous contributions of Bacchus, proffered to us as is still the custom, in the primitive goat's skin, added to the excitement of hourly discovery of the noblest productions of Grecian art, and constituted a memorable adventure of rare interest and enjoyment. Apollo himself might have been roused from his long repose by these carousals, and have thought that the glorious days of old were about to return.

Scarcely had the sculptures been collected, and safely embarked on board a vessel provided at Navarino, when a change of government took place ; the Vizier, Vili Pasha, was superseded by another, who sent his janissaries with a protest against their transportation ; but he was too late. The precious fragments were already on their way to Zante, where they remained until their final sale. This took place in the following year in favour of the English Government, by whom they were purchased for the sum of 60,000 dollars, and they now form one of the most splendid ornaments of our British Museum.

The enterprise was thus crowned with the happiest results, the architecture of the Athenian Ictinus was restored in almost every particular, and an important chapter of Greek archæology, full of interest and novelty, and of remarkable completeness, has been added to former acquisitions. The frieze, 101 feet long, certainly from the school of Athens, if not by the hand of Phidias, or Alcamenes, offering a new reading of the often repeated Centauromachia and Amazonomachia, the favourite subject of Grecian art, was preserved to the world ; fragments of the hands and feet of the acrolithic Idol, which apparently replaced that celebrated one of bronze presented to the city of Megalopolis by the Phigaleians,† and finally some highly interesting fragments of the metopes which adorned the pronaos and posticum of the temple, made up the sculpturesque results of the undertaking.

It is obvious that the leisure and the appliances enjoyed by the architects in carrying on these investigations during two distinct residences on the spot in 1811 and in 1812, give to their efforts an unquestionable advantage over those made by travellers who had not dwelt amongst these remains under the same animating hopes and with like means at their command, and which are consequently erroneous in some particulars. Mr. Donaldson was the first to publish an account of this Temple ;‡ and three years afterwards appeared the work of the French

* Performed during the rebuilding of the walls of Messene by Epaminondas. See Pausanias, Arcad., ch. xxvii.

† See Pausanias, Arcad., ch. xxx.

‡ Supplement to the Antiquities of Athens. London (Weale), 1830.

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Commission,* in which the obligations to Mr. Donaldson's work are admitted, as well as to that of the painter and archæologist, the accomplished Baron Stackelberg, who published the Frieze in 1829. No other justification of the present publication need be given, with a recommendation to compare the plates and descriptions of the respective works: and elaborate criticisms may thus be spared.

The editor himself was unfortunately on his professional travels in Sicily, during the second investigation, but the well-known care of the conscientious and accomplished Haller, evinced in the elaborate and precious documents of the ultimate examination, confided to him for publication, and which are still in his possession, constitutes a guarantee of the accuracy of the result, which claims the fullest confidence. In preparing these drawings for engraving some adjustments have been naturally suggested, which will be explained in their proper places.

Pausanias in his topographical description of Arcadia, is the only historical authority whose statements we are enabled to quote on the interesting remains of the Temple of Apollo Epicurius, at Phigaleia. The remoteness of the edifice from the more inhabited parts of the Peloponnesus, and its position upon a lofty mountain, have preserved these works of a rural people to the present day in a most surprising condition of beauty and order; while of the celebrated Temples of Argos, Tegea, and so many great cities, not one stone is found upon another, and scarcely a fragment of them remains as testimony of what they once were. Had it not been for the fury of the iconoclasts, the whole of the temple might have been preserved to this day. And that its partial destruction was due to their hands and not to an earthquake is evident to the architect by the fact that while the well-buttressed and iron-cramped walls of the cella have been destroyed, the lengthened peristyles, so naturally weak from the want of lateral support, are still standing in almost their entire periphery; as indeed is the case in most instances where the footmarks of the iconoclasts are to be traced.

Pausanias,† writing about A.D. 170, describes the city of Phigaleia as "surrounded by a lofty range, on the left by the mount Cotylius, on the right by mount Elaion, which is still more lofty. The Cotylius is at the utmost forty stadia from the city, and on it is a village called Bassæ, where stands the Temple of Apollo Epicurius, which is all in marble, even to the roof. Of all the temples in the Peloponnesus, this, after the Temple at Tegea, is the most admirable, on account of the beauty of the marble, and the harmony of its proportions. This surname has been given to Apollo, because he succoured the Phigaleians when they were attacked by an epidemic sickness, just as the Athenians gave him the surname Alexicacos, because he delivered them also from a malady which afflicted them. It was precisely at the epoch of the war between the Athenians and the people of Peloponnesus‡ that the God caused this malady to cease amongst the Phigaleians; I find the proof of this in the surname of Apollo, which has the same signification amongst all people, and from the fact that Ictinus, the architect of this Temple of Phigaleia, flourished in the time of Pericles, and constructed the Parthenon of Athens. I have already related that the statue of Apollo which was in this temple is now in the public square of Megalopolis."§

History makes little mention of Phigaleia or of its magnificent temple. Rhianus, a poet of Thrace, Stephanus Byzantinus, and Athenæus, in their casual notices of the place, add nothing of interest or importance. We know, however, that the Phigaleians entered warmly into the Achæan League, and the foundation of Megalopolis, to which city they presented their noble statue of the God; but the extent and wealth of the district is to be judged of by the generous enterprise exhibited in this splendid work, achieved, as we have said above, by the assistance of the best foreign skill, viz., that of the Athenian Ictinus, and carried out in a true spirit of magnificence, scarcely inferior to that of the Temple of Theseus at Athens. The position assigned to it most probably was chosen to mark the spot where the deity first restored health to the people of Arcadia, as well as on account of its conspicuous elevation, commanding all the south of the Peloponnesus and the Mediterranean Sea beyond.

Strabo, writing A.D. 25 (more than 150 years before Pausanias), gives a deplorable account of the state of the once happy Arcadia. "As this country," says he, "is totally devastated, it would be useless to offer a long description of it. Cities formerly celebrated, have been destroyed by continued wars; those who cultivated the lands have abandoned them since the epoch in which the greater part of the neighbouring towns united themselves into one city, which was called Megalopolis; and even this city is reduced at present to such a state, as to justify the words of a comic poet, that 'the *great city* is nothing more than a *great desert.*'"

* Expédition Scientifique de Morée, vol. iii. † Arcad., ch. 41. ‡ Viz., about 438 B.C. § Vid. supra, ch. 30.

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We look in vain for any other authorities of weight either in respect of this temple or of the topography of this interesting neighbourhood. The entire purpose of the present work being the description of the architectural remains of the temple, we must content ourselves with referring our readers to the work of Colonel Leake, on the Morea, vol. ii. p. 11.

In our first visit we found thirty-four of the thirty-eight columns still in their places; the two angular columns out of the ten which stood in the southern end had fallen; the walls of the cella and the interior piers and their entablature exhibited a mass of ruins. We were still able to trace a platform, twenty-two feet wide, to the west, and a corresponding one to the east, of irregular paving, smaller in width, but ranging the whole length of the temple.

The walls, columns, and entablatures, were built of grey compact limestone from the neighbouring mountain, with white and red veins running through it; the very remarkable tiles of the roof, the sculpture throughout, the trabeation and lacunaria of the north and south porticoes, and the capitals of the interior architecture, were all in marble.

PLATE I.

VIEW OF THE RUINS OF THE TEMPLE FROM THE NORTH.

The Temple of Apollo is situated on a step or spur of a ridge of Mount Cotylius, the rocks to the north rising rapidly, while to the south they descend gently into the valleys of the Plataniston and the Neda.

"In the prospect from the temple, the steep mountains on the eastern side of the Glen of Bassæ are blended with the great summits of Mount Lycæum, called Karyatiko and Dinaforte. To the right of this range, and in the direction of the course of the Plataniston, the majestic summit of Titrazi presents itself, with a cultivated space at the foot of it, around the village of Kakaletri. To the right of Titrazi, Mount Ithome appears above part of the ridge of Titrazi,—and to the right of Ithome the Messenian Gulf—Koroni, Mount Lykodhenio, and then the range of Kondovuni." *

Such is the view presented to us imperfectly in the plate; and here, and at such an elevation, may well have been placed the Temple of the God of Health and Beauty, seen, as it was, from all the surrounding country, and situated at a distance of forty stadia, or five miles, from the city of Phigaleia, now called Paulitza.

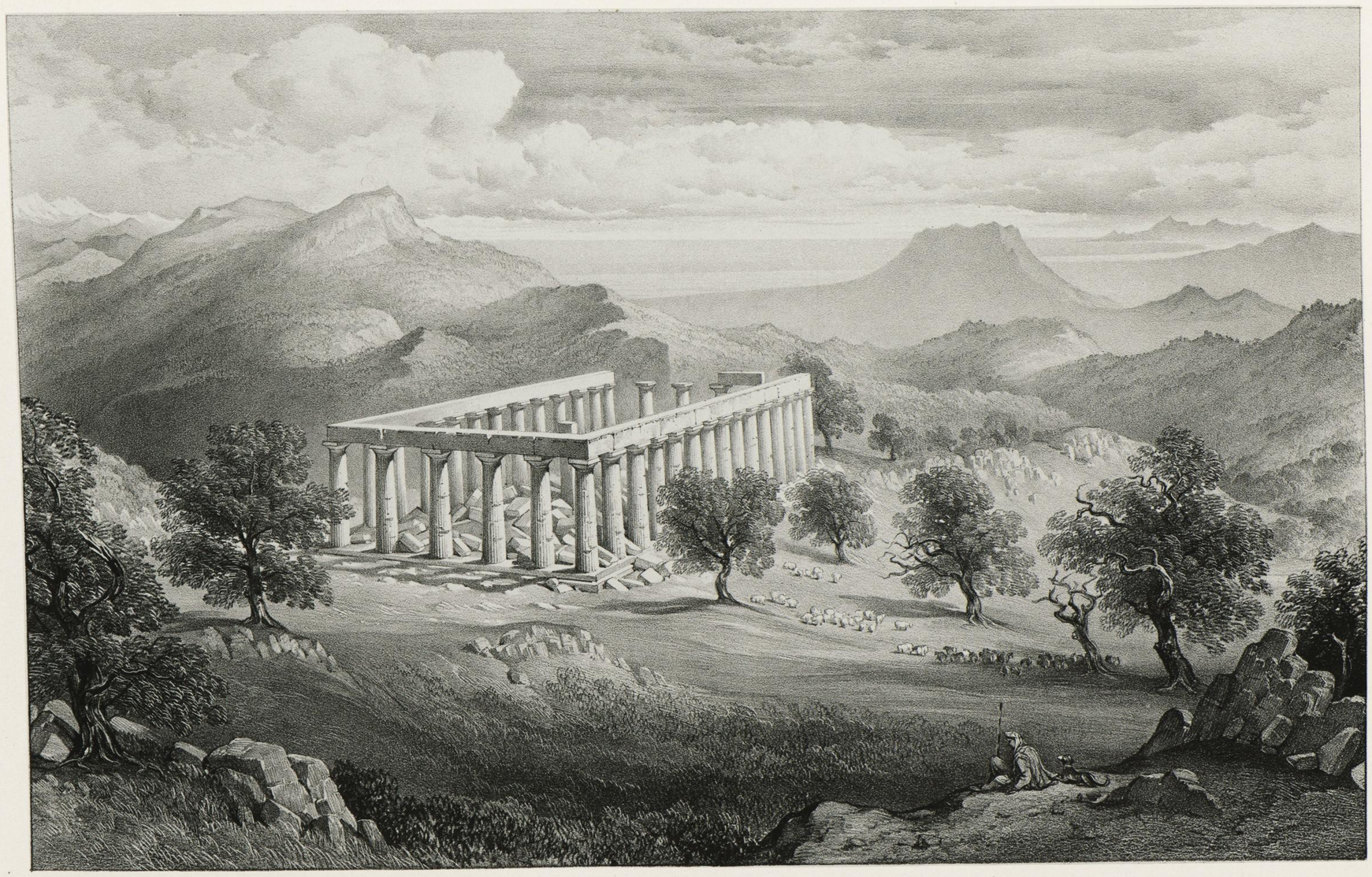
A pilgrimage from such a distance, through a wild and woody country of hill and dale, gradually abstracts the mind from all commonplace associations and from the artificial aspect of the busy city; and is well calculated to prepare it for those impressions which the beauty and order of a polished temple cannot fail to produce, by contrast of harmony and art with the wild and almost savage scenery by which it is surrounded. Perhaps none of the ruins of Greece can vie with those of Bassæ in this effect upon the feelings of the traveller who visits it for the first time.

The platform on which the temple stands will be remarked as of no great extent to the north. The flanking ground, which declines considerably to the west, was aided by an artificial terrace, about twenty-two feet wide; and the same occurs to the south: on the eastern side, about the same space intervened between the temple and the precipitous rocks which formed the natural ridge on which the edifice stood.

Even now the resort of the lowland inhabitants on holidays and in fine weather, we may easily imagine the interest of this solitary scene when it was peopled by devout crowds of their illustrious ancestors, celebrating the periodical festivals of their religion with all the solemnities of the Choragic Dance, the Pythian Hymn, and

* Col. Leake's Travels in the Morea, Vol. ii. ch. xii. p. 1—12.

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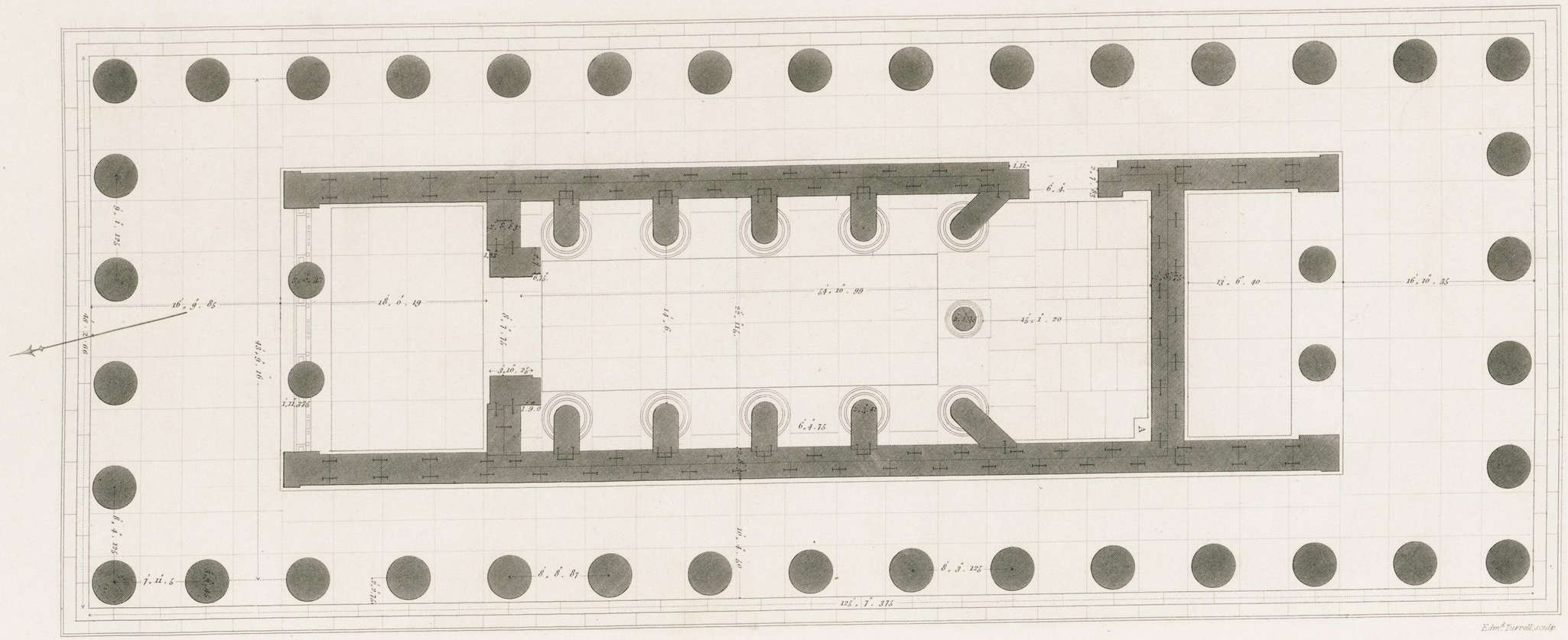


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GROUND PLAN OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

Published by John Weale, 59, High Holborn.

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the cheerful accessories of poetry and music; as pious acknowledgments of health and joy conferred upon his beloved Greeks, in which the exalted and benevolent deity delighted.

The view of the south end of the temple, representing the active operations of the excavation, with its indispensable accompaniment of the native band of music, is partly taken from the work on the Phigaleian marbles, by the accomplished Baron Stackelberg.

PLATE II.

The Orientation of this temple, north and south, instead of the usual direction of the fronts to the east and west, is the first feature to which we have to advert.

Its parallelism with the narrow ridge on which it is built, and the conspicuous display of the southern front towards the plains of Messenia and the Mediterranean, while it exposed for many miles its western flank together with the southern front to Phigaleia, may have been motives for this singular collocation. But although the regular entrance to the temple was obviously from the north, through a spacious portico, a pronaos and highly decorated cella to the sacrarium within, it is remarkable (as if in conformity with the usual practice in Greece, of entering the temple from the east) that a doorway of scarcely secondary importance both in magnitude* and decoration, is placed in the eastern peristyle; forming an important entrance into the sacrarium, and receiving the first rays of early dawn upon the image of the deity within; thus fulfilling, as respects its entrance from the east, the usual condition of the Grecian temple,† a suggestion which is warranted by the fragments of the acrolithic statue in Plate XVI., found in this portion of the temple.

The temple itself was hexastyle in the fronts by 15 columns in the flank; the dimensions of the first step being 125′ 7″·375 by 48′ 2″·66; accordingly we have in it a parallelogram of unusual length, and greatly exceeding the rule of Vitruvius, ‡ "that the length of the temple should be twice its width." At Ægina we have a hexastyle with 12 columns in the flanks; the Temple of Theseus, at Athens (on the first step, 104′ 3″ by 45′ 3″), has 13 columns in the flank; at Selinus the hexastyle extends to 14 and 15, and even 17 columns in the flanks. At Syracuse, at Pæstum, and at Segesta, the columns in the flanks are 14 in number. A comparison of these examples seems to show that the elongation of the parallelogram was a growing innovation of Grecian taste, and therefore that the most elongated are in all probability of more recent structure. The artistic advantages of this elongation are obvious: internally the several features, the porticos, the pronaos, posticum, and cella, are more spacious; externally the contrast of the horizontal line and architectural regularity of the order with the irregular lines of the mountains and surrounding scenery is much more striking and effective.

The ceremonial and principal entrance, however, is from the north, through a spacious portico highly adorned with marble ceilings and elaborated entablature over the order of the pronaos. The latter (the pronaos) is of great depth, closed in by gates apparently of metal *cancelli,* in frames fitted to an elaborately moulded marble step fixed between the columns (see Plate VIII.), and fastened to the sides of the columns and antæ, the indications of which are still apparent; no defence of this kind appears in the posticum. A door of great width, presenting two pilasters (the caps of which are shown in Plate XIV. towards the cella), and doubtless of a height equal to the interior order, exhibits towards the pronaos the attachment of dressings of metal or of some

* It is 6′ 4″ wide, while that from the west is 8′ 7″·75. The existence of this doorway is declared in the works of Mr. Donaldson and of the Baron Stackelberg, and on the two occasions of our examining and delineating the plan of the temple with so much deliberation. The structure of the masonry carefully given in the plan, and the preparation for the dressing or architraves (1′ 11″ wide), leave no doubt of this fact: the French Commission taking no account of these important evidences, deny its existence: "Les auteurs dont nous avons parlés (Baron de Stackelberg et M. Donaldson) veulent qu'il y ait eu une porte qui selon nous n'a pu exister. M. C. le Normand a visité avant nous le Temple d'Apollon, et il est de notre avis relativement à cette porte."

† This position is not unexampled. The Temple of the Sun at Palmyra stands north and south, with four entrances from the east; the principal are 32 feet high by 15 wide: there are also five doorways from the west, an arrangement probably demanded by some peculiarities of the ritual belonging to it.

‡ Book iv. ch. 4.

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other precious material. The extraordinary width of this doorway (8′ 7″·15), the solidity and depth of the jambs (4′ 5″·75), and the magnitude of the architraves or lintels above, exhibit another proof of the importance always attached to the portal of the Greek temple, and on which we have already remarked in our account of the temple at Ægina.

The disposition of the cella is unusual ; instead of supporting the roof with isolated columns in two orders, as in the Parthenon at Athens, at Ægina, Pæstum, and elsewhere, the lower, ordinarily ¾ of the height of the external columns, we have one order of attached columns performing this office, and exceeding the external columns in height.* Ten of these are of the same order ; in the form of the parastas or buttress to the wall, and giving an extraordinary strength and solidity to the structure ; these, together with one central and isolated column, distribute the intercolumniations in equal and harmonious divisions round the cella. The columns and sculptured entablature of which adorning this important feature of the temple, are elaborated in the most careful and exquisite manner.

In the centrality of the isolated column, we recognise the architect of the cella of the Parthenon. With Ictinus this feature may have been a doctrine, though common perhaps to others also in Greece at that period ; at all events, it appears to have been derived from very ancient, and possibly from Hebrew authority. The Tabernacle of Moses, the great Temple of Jupiter at Agrigentum, the temples at Pæstum and at Pompeii, and the choragic monument of Thrasyllus, all exhibit this centrality.† The diagonal position of the two columns or piers on either side the central column call for some remark : it is quite certain that, viewed from the doorway, and absolutely from the third column on the flank, they would appear to be equally isolated with the central column, and by consequence would properly be adorned with the same Corinthian cap and base ; the latter (the base), however, having been found in situ, reduces all doubt to the cap only, and it is evident that this, ranging with the others, would present its angle (see Plate IX.) towards the cella, while the northern and southern faces of the cap would be incomplete. Various have been the attempts to solve this difficulty, which, after all, must be left to conjecture and to the faith which we may confidently place in the genius of the architect employed upon this important work. Neither can we doubt the removal of all objection to the arrangement on the part of the spectators as they stood in the contemplation of the idol in all its beauty and sanctity. This and other peculiarities of this work exhibit the perspective science of the architect, and show how freely and confidently he could deal with his materials, regardless of the reproach of anomaly and caprice. In Plate XI. this question has been met, in the hope of assisting the student of this interesting specimen of architecture. The structure of the walls comprising the interior architecture (carefully rendered in the Plan), with their insertions and attachments, and of the exquisite details of this portion of the work, plainly show that the whole edifice was coeval, by the same hand, and part of the original design.

The interior columns are raised upon a step (3·75 inches high), leaving the central area lower, apparently to secure the bases and the statues which were doubtless placed in the intercolumniations, from the wet and snow which might enter through the hypæthral opening.

That the cella was hypæthral is highly probable from the necessity of light for the appreciation of the works of art deposited therein, especially the elaborate frieze which adorned the order. That the ὄψις was of limited opening is also probable from the necessity of protecting the cella in this rude and stormy region. Such a conclusion is also in accordance with the dictum of Vitruvius, who says that "temples are built hypæthral and unenclosed to Jupiter Tonans, to Cœlus, and to the Sun and Moon." ‡

The irregular stones with which the sacrarium was paved, somewhat lower than the step on which the columns repose,§ shows that this feature of the plan had been adorned either with a stucco paving like that at Ægina, a marble paving, or Mosaic, like that discovered by the French Commission at Olympia.

The sacrarium comprises the whole width of the cella, and somewhat less in the opposite direction, north and

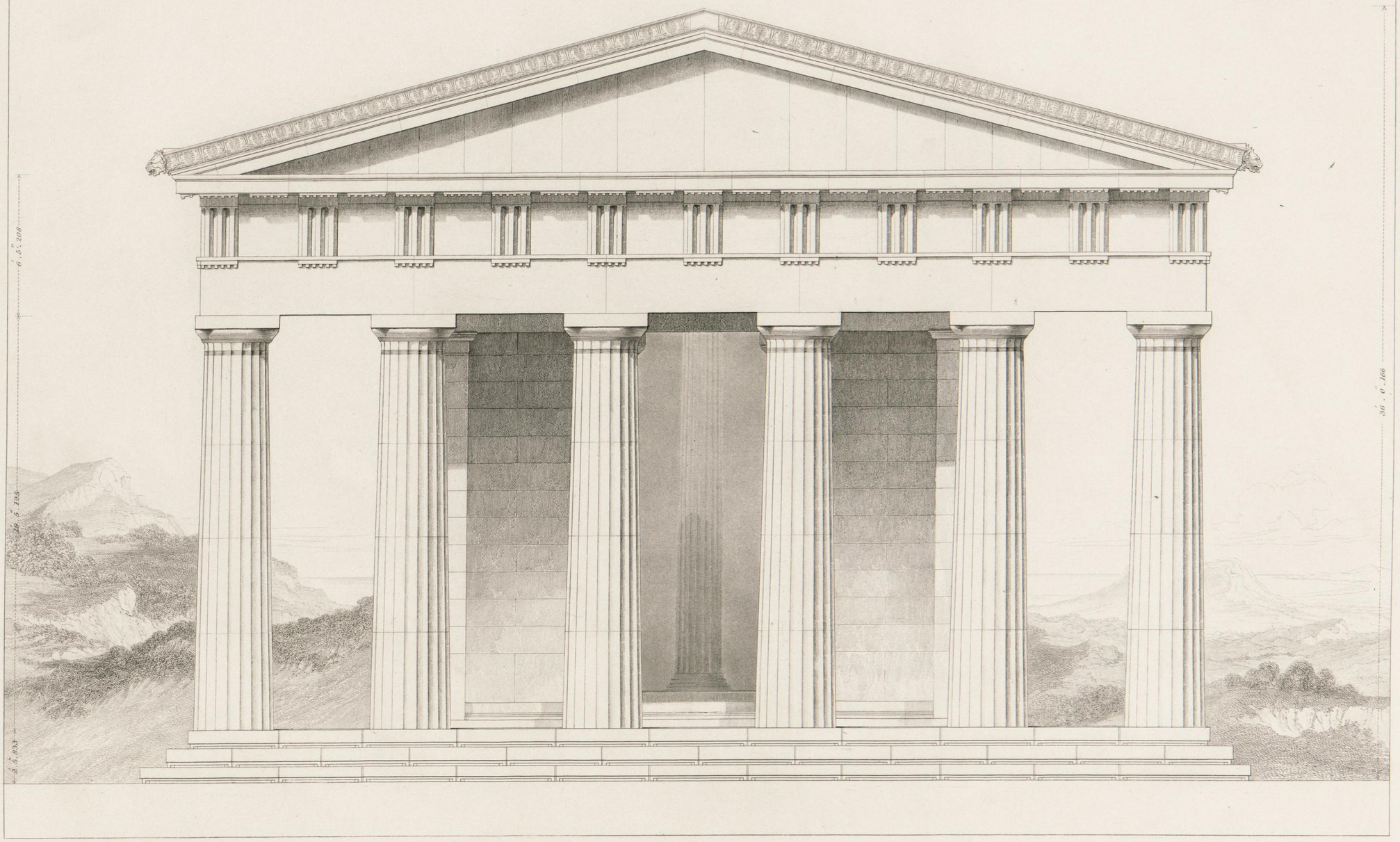
* It may be observed in respect of height that the Temples of Apollo Dindymæus, near Miletus, and at Balbec are on this principle.

† The mediæval architects often accepted this arrangement ; and Brunelleschi, in the church of Santo Spirito at Florence, affords a complete vindication of this system, however contrary to the received modern doctrine of central openings in preference to central supports.

‡ Lib. i. ch. 11.

§ Around this portion of the place, especially in the south-west angle, a line (see Plate II., Fig. A.) shows the elevation of the step above the irregular paving—which may have an important significance as the first stone laid in the building, and as regulating the levels.

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Ja.s Carter, sculp.t

NORTH FRONT OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

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south : it is unadorned with architecture, but the rough surface of the surrounding walls suggests the probability of its having once been enriched with paintings upon an artificial surface like the paving already remarked. The large eastern doorway, with its conspicuous dressings (1 foot 11 inches wide), must have been designed for a very important purpose, viz., to adorn the tabernacle of the Deity. Supposing the sacrarium to have contained the Image of the Deity (the remains of which we found there), this area would be quite sufficient for its dignified occupation, and being illuminated through the eastern doorway, it would receive a flood of light at the rising of the God of Day. Two steps, if not more, were necessary to this doorway as an entrance into the sacrarium, but they have been entirely removed.

The Posticum is the last feature which we have to remark in this plan. It does not communicate with the sacrarium of the temple, and it has less depth than the pronaos ; nor had it any defence by cancelli or otherwise from the peristyle as in the northern portico ; but the extraordinary magnitude and elaboration of the ceiling in its marble lacunaria and their painting and gilding (see Plates VIII. and IX.), clearly point out that it was designed for some important purpose. Raised on such an elevation, and seen from a distance of at least thirty miles to the south and the Mediterranean, it may be suggested that this posticum may have been adorned with the larger statue of bronze mentioned by Pausanias as having been presented to the new city of Megalopolis. Such a position is frequently exhibited in medallic and other figured remains of antiquity.

In this plan the delineation of the stones composing the walls of the first course (that of the orthostatos), as well as of the paving and of the steps, has been carefully expressed. From such observations very important results, both as to the structure and the rules of the Greeks in architectural arrangement, may often be obtained, for the further elucidation of these precious remains of antiquity.

PLATE III.

ELEVATION OF THE NORTH FRONT OF THE TEMPLE.

This was undoubtedly the principal entrance to the temple. It displays the front of the pronaos, the great doorway, and the central column of the cella ; in other respects the south front seems to have been similar in all its parts and features.

The Theseium, the favourite model in Greece, seems from its similarity to this example, to have influenced these proportions ; the dimensions only are somewhat greater here : the columns diminish less, and are altogether stouter in their shafts. As in the case of the Parthenon by Ictinus, it is remarkable that the inclination of the axis, the entasis in the column, and the curvature of the horizontal lines could not be discovered in this work, either by the excavators or by subsequent travellers.* The stylobate is composed of three steps, but they are lower than usual. The emphasis is given to the isometrical division of the stones composing these steps, by a perpendicular channel, and by the relief given to them in the undercutting of the riser. These divisions are carefully concealed in the Athenian remains, for which the exquisite material, the Pentelic marble, and the no less exquisite workmanship of the masonry may have been sufficient reasons ; but we cannot refuse our admiration to the Doric expression conveyed by this equal division, the especial characteristic of that order. The isometrical division of the stones composing the walls of the cella, no less than of other parts and features throughout this temple, is to be observed as of great beauty and expression, and may very probably have occasioned the particularity of the phrase used by Pausanias in commending this work on account of "the beauty of the stone of which it was composed, and its harmony throughout."†

No evidence of sculpture in the north and south pediments could be found, either on the surface of the cornices or on the face of the vertical stones composing the tympanum : on the contrary, the identity of projection in the raking and the horizontal cornices proved distinctly that no provision for sculpture in those

* Principles of Athenian Architecture, p. 27.

† Arcad., ch. xii. *τοῦ λίθου τε ἐς κάλλος καὶ τῆς ἁρμονίας ἑνέκα.*

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features had been made, according to the invariable practice in sculptured pediments, of recessing the tympanum, to give ample room and projection to the sculpture. But on the apex of the pediment (see Plate VII.) and at the extremities, preparation was certainly made to receive the acroteria (though unfortunately no fragment of the latter remained) so that the figure of the Temple was in itself complete, and being remote, and calculated to produce a distant rather than a near effect, it did not require those groups of sculpture which were usual in the crowded city ; neither were there any evidences of sculptured metopes discernible in either of the external fronts. These important ornaments were reserved for the front of the Pronaos and Posticum, where, in their ample space, and in the shade so grateful to travellers arriving from a distance, they would be read and enjoyed, together with those unusual ornaments, the marble ceilings, and internal sculptures, by which this Temple was distinguished above all others in the Peloponnesus.

The cymatium over the pediments appears to have been the only feature in this Temple in which external ornamentation was used. Instead of the usual ovolo employed in Ægina and the Parthenon, the Propylæa, and other examples, we have here the cyma recta of the Asiatic form, and of remarkable breadth and beauty.

The Lions' heads at the extremities had all been broken away, but the stones to which they had been attached were still discovered; they have been restored according to the unvarying practice of the Greeks in this feature—at once an ornament and a necessity for the discharge of the water from the roof.

In the proportions of this front a strong resemblance to that of the Theseium will be traced ; the entablature is somewhat lighter, and the hand of Ictinus is again discernible in the proportions of the column, which also resemble the Parthenon rather than the Theseium. The central column within the cella recals the arrangement adopted in the Parthenon.

The landscape represents the outline of the scenery to the south, the snow-clad hills of Sparta, Messene, and the Mediterranean ; a view well calculated to relieve the severity of the Doric style.

PLATE IV.

EAST FLANK OF THE TEMPLE.

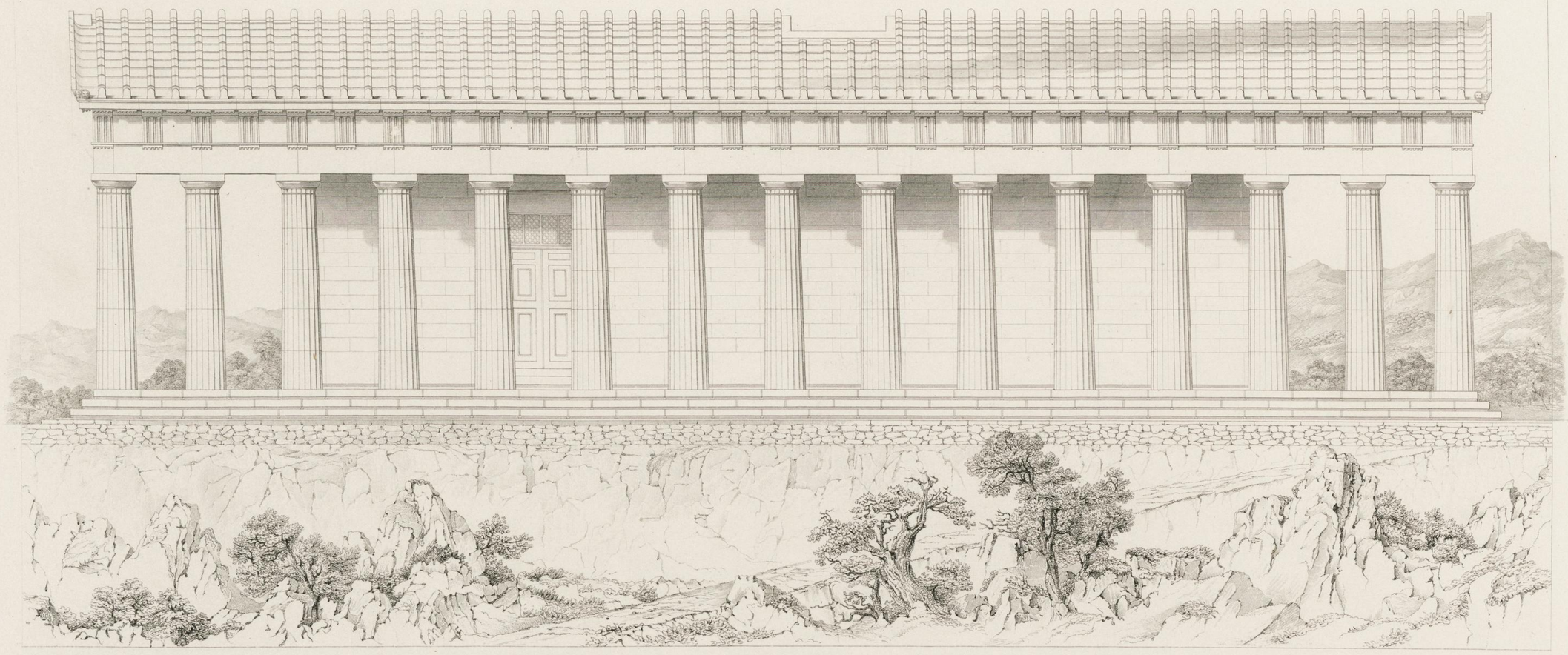
The east flank of the Temple on the ridge of the Mount Cotylius, shows the elongated extension of the peristyle, the eastern doorway, the ample porticos north and south, the marble tiling exactly co-ordinate with the triglyphs and metopes of the entablature ; the isometrical arrangement of the masonry in the stylobate of the walls, the columns, and the entablature.

Few examples display more conspicuously the importance attached by the Greeks to the structural expression of the Doric Temple, the regularity of its order, the identity of its features and parts, the material magnitude of those parts, and the association of power and of skill in the transport, and in the nice adjustments of its vast and solid masses.

In the age of the world which witnessed the erection of this edifice, the manual faculties were in no less estimation than the intellectual ; the Gymnasium taught that personal prowess was an equally important element with mental ἀρέτη in human excellence.

Epaminondas, no less than Ajax, prided himself on the power of raising great weights with his single arm, at the same time that his philosophy had taught him to estimate proportion and beauty. The accomplished Greek, like the operative mason, thus became capable of estimating the monolithic mass, and of appreciating the difficulties of raising and drawing these ponderous weights from the quarry to their intended position, and their nice and exact adjustment in the edifice itself. Equally with the beauty of architectonic proportion and form, the evidence of gigantic force and of ordered perseverance, was the criterion of the sublime in his mind, and inseparable from his estimation of works of architecture.

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EAST FRONT OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

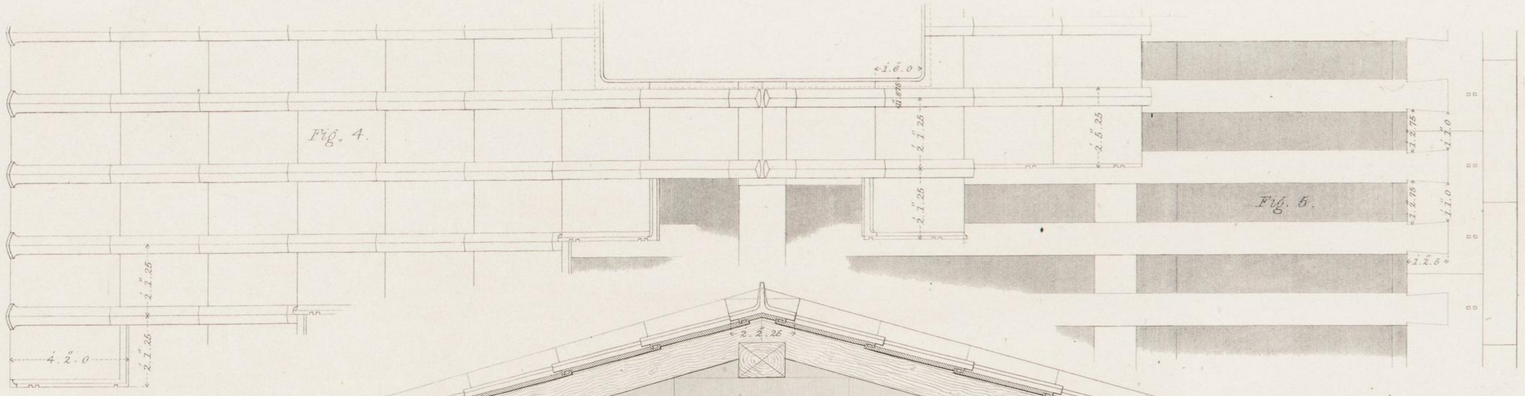
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SECTION THROUGH THE PRONAOS OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

C. R. Cockerell, del.t

Jas. Carter, sculp.t

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Sacred and profane history bear testimony to this fact, no where so emphatically expressed as in the first Book of Kings—The use and estimation of "great stones and costly stones and hewn stones," and "stones of eight cubits, and stones of ten cubits," was universal no less in Greece than in Judea; and it is highly probable that the same reverential practice described in the building of the Temple at Jerusalem prevailed also in Hellas, namely, that the stones were made ready before they were brought to their destination, so that "there was neither axe, nor hammer, nor any tool of iron heard in the house while it was building." These stones were adjusted in the quarry, and marked for their destination, so that little remained to be done in the setting. The precipice to the east and the landscape to the west have been introduced, in order to relieve the rigour of the architecture, and to convey a just impression of the situation of the Temple on the eastern flank.

PLATE V.

SECTION THROUGH THE NORTH PORTICO.

The section through the northern portico in this plate shows the order of the Pronaos, the ascertained structure of the wooden roof, the marble tiles, marble ceiling, and beams, the sleeper walls, carrying the paving and foundations of the peristyle.

The entablature is on a lower level than that of the peristyle, differing from the Theseium and the Parthenon in that particular, probably as better suited to the display of sculptured metopes, as well as to the proportions of a smaller order. The elaborate marble cill for the reception of the metal enclosure of the Pronaos is seen below, and is drawn at full size in Plate VIII. In the intercolumniation, it is clear that it formed a cill over which the foot stepped. The painted ornamentation of the beams in the engraving is suggested from the parallel example of the Theseium, their actual design not having been discovered.

These beams are of marble, and thirteen feet in the clear; in the Propylæa of Athens they were eighteen feet; they are cited with just admiration by Pausanias; nor does it appear from any extant record that a structure of equal boldness was ever attempted elsewhere. It should be observed that these are hollowed, in order to diminish their weight, whilst those of the Propylæa were left solid, and the lacunaria above are lightened of all superfluous weight. In Plate IX, the plan of these ceilings is seen, with the variety of pattern in the lacunaria and the greater width of the terminating bays. The transverse beam lying partly upon the entablature, had the effect of making the ceilings of the porticos entirely separate from those which flanked the edifice.

Fig. 2. Section of the southern posticum or opisthodomus and the marble ceiling of that feature, consisting of thirty-six lacunaria in marble highly adorned with gilded decorations, see Plates VIII. and IX.

Fig. 3. Section showing the flank of the Pronaos, and the mode of finishing the entablature on the return east and west, and the several levels of the lacunaria.

Figs. 4 and 5. Show the plan of the timbers of the roof, of the marble tiles, and the probable form of the hypæthral opening. These are worthy of particular notice, as the most complete description of the temple roof hitherto known to us. Seventeen rows of marble tiles, the largest hitherto found, cover the roof: the five central ones (possibly a smaller number), formed the compluvium or hypæthral opening to the cella; the extreme tile, with its corner shaped to its position, was happily discovered; quite decisive of this interesting fact, but not determining whether the width of the opening consisted of five or three of these tiles. These tiles repose upon timber beams, the scantling of which was discovered by their dove-tail insertion in the cornice stone, leaving no doubt whatever of their position and destination. The three large beams carrying these rafters as they stand over the porticoes north and south, are matters of inference, as also are the walls on which they repose.

It is to be remarked that these tiles were better proportioned and larger than those of the Parthenon, being 2′ 1″·25 wide by 3′ 6″·50 long; the eave-tiles were 4 feet long, while those of the Parthenon appear to have been

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2 feet 3 inches square. They were of Parian marble; and we are assured by Mr. Penrose,* that those of the Parthenon were of a similar material: we are thence led to infer that there was a manufactory of such tiles at Paros, as the best material to be found in Greece, for this purpose.

The discovery of this arrangement in so complete a form was most fortunate, explaining, as it does, this important feature of the templar roof.

The arrangement of the sculptured metopes over the north entrance to the Temple corresponds with that described by Pausanias,† in the Temple of Jupiter at Elis, where he cites six of the labours of Hercules over the Pronaos and the Posticum; fragments of which are in the Museum of the Louvre. They could have stood in no other position than as metopes of a Doric entablature, in the manner here discovered.

Twelve fragments of these metopes are now in the British Museum;‡ they are larger and of superior sculpture to that employed in the interior frieze. Some of them bear sufficient evidence of their application to the God of Science and of Art, whose worship was celebrated in the Temple, and may warrant the restorations suggested in this Plate.

The first and the last (Nos. 28 and 31) exhibit the cymbal and the castanets, held by figures in attitudes which allude plainly to the choragic dance, at once the solemn business and the recreation of the votaries of Apollo, and hardly less characteristic of the present times, than of those in which Terpsichore held so high a rank among the Muses.§ The second figure from the left is the restoration of a beautiful fragment, the subject of which is no less obvious in its interpretation, than symbolical of the votary of fine art. A nymph, with her head and arms enfolded in drapery, retreats rapidly from her lover, whose right hand, stretched forth in the vain hope of reaching the object of his desires, is still unclenched. This can be no other than the pursuit of Daphne, who, as the daughter of the river Ladon, close by, could hardly have been omitted in these illustrations. The attainment of perfect beauty was denied even to the god himself—the fleeting excellence eludes his grasp —but his melancholy is at least consoled by the laurel, with which his arms are filled in the noble endeavour. In the third metope from the left, a restoration of a fragment (No. 34) has been attempted. In this an obese figure is represented leaning against a tree or other support; the lower part is disguised in drapery. It may possibly have represented the native deity of Arcadia,‖ the venerable Pan; he may have been grouped with his beloved Syrinx, the nymph whose name is given to his reeded pipe.¶ The fourth metope is suggested by a beautiful fragment (No. 28), representing a young and dignified male figure, crowned with a tiara, his hair bound and descending behind his shoulders; a brooch on his breast confines his drapery, a sash sustains a lyre; the left hand, seen through the strings, is open; the right (which is wanting) may possibly have held the plectrum. In comparing this with the examples in the British Museum, and with five others quoted in the description of the Townley marbles, we can hardly escape the conclusion that we have here Apollo in the character of Musagetes, receiving the libation of victory, according to the ceremony of the festival called Thargelia in honour of Apollo and Diana. This was a frequent subject of Grecian art. The fifth metope is suggested by a bearded and elegant head in a studious and attentive attitude (No. 33), which would well apply to the God in his most beneficent attribute as the succourer (Epicurius), or to his beloved son Æsculapius, in discourse with his daughter Hygeia, according to the groups so frequently found in antiquity.**

There are still six other fragments, which appear to have belonged to the remains of the twelve metopes used in these two porticoes; but all of these are so broken as to offer no suggestions sufficiently distinct to admit of the conjectural completions here applied to the more preserved fragments.

* See Principles of Athenian Architecture, p. 46.

† Elidi, ch. x.

‡ They were numbered Nos. 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, and 38; the three first have been engraved in the publication of the Phigaleian Marbles, Plate 24, by the Trustees of the British Museum.

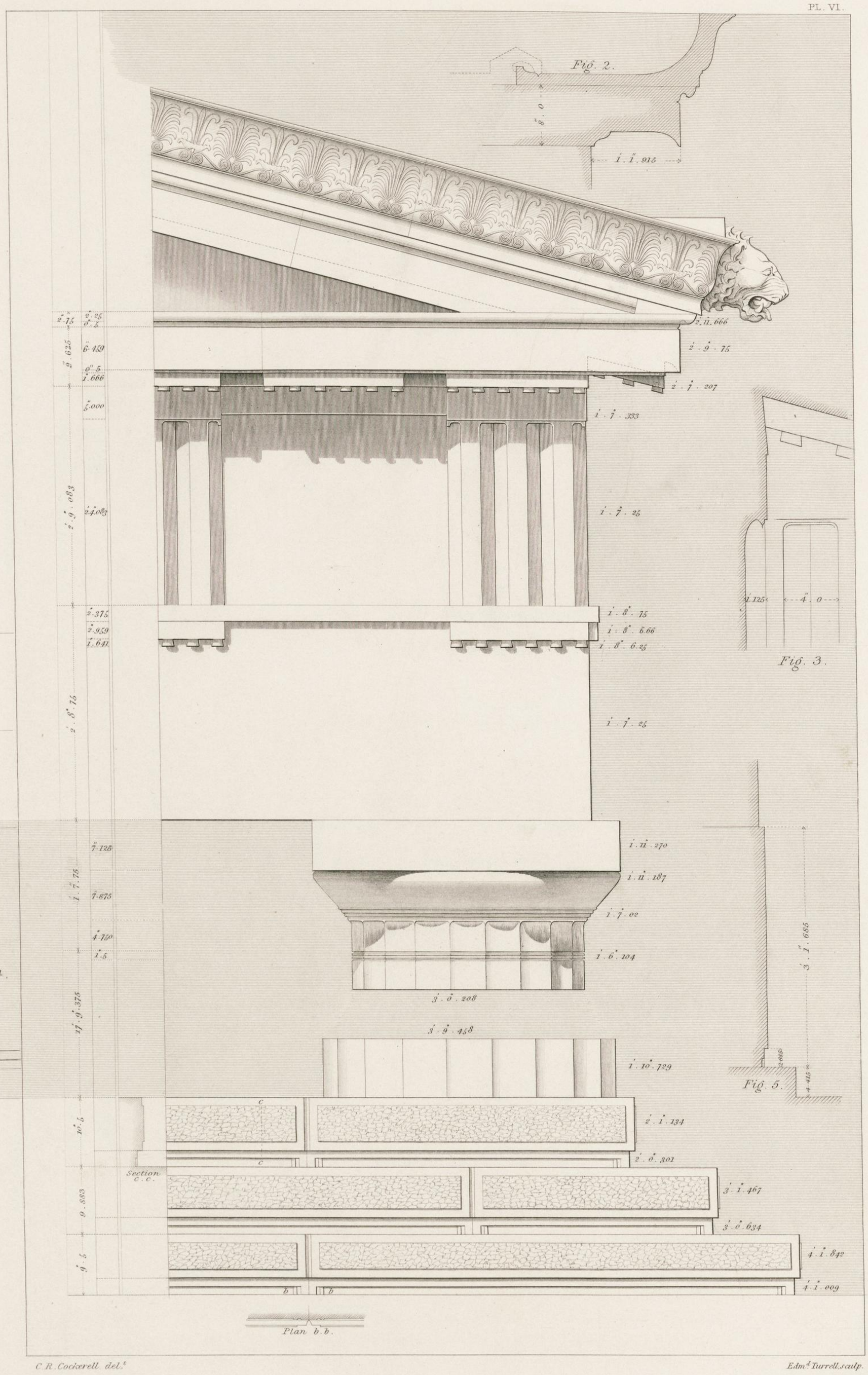
§ Ὁ ἀχορευτὸς ἀπαιδευτός, was a proverb among the Athenians.

‖ Pan, Deus Arcadiæ. Virg. Ecl. X., 26.

¶ Pan etiam calamos cerâ conjungere plures, Instituit. Virg. Ecl. II., 32.

** See Millin, Galérie Mythologique, vol. i. pl. 32.

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EXTERNAL ORDER OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

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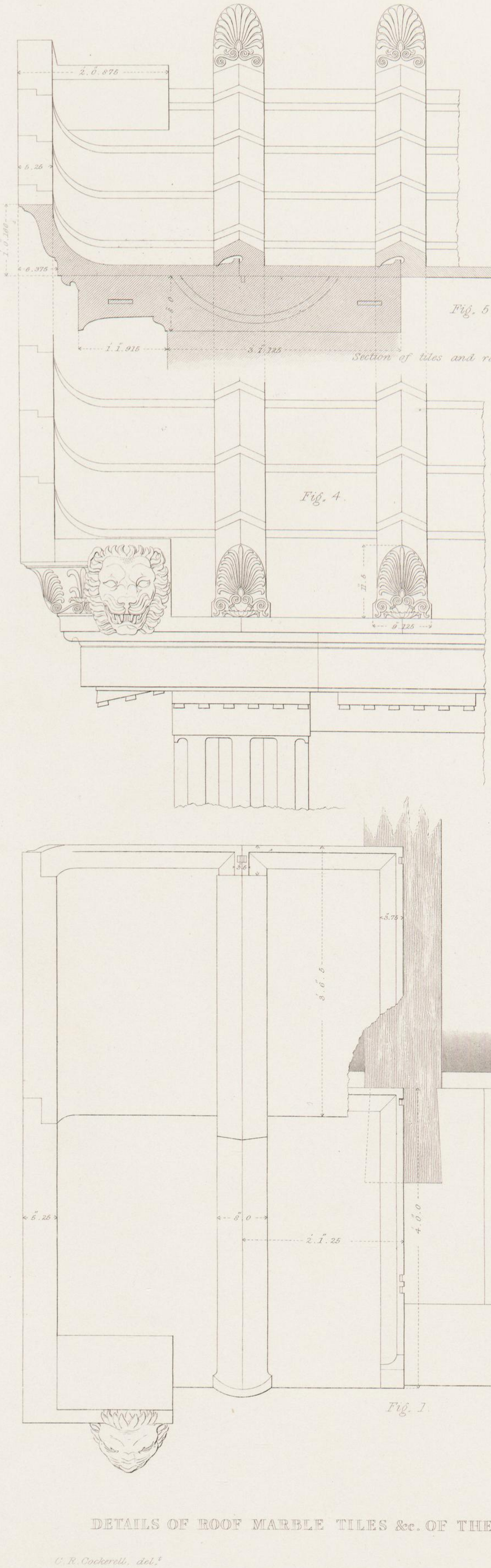


Fig. 5.

Section of tiles and raking cornice of pediment.

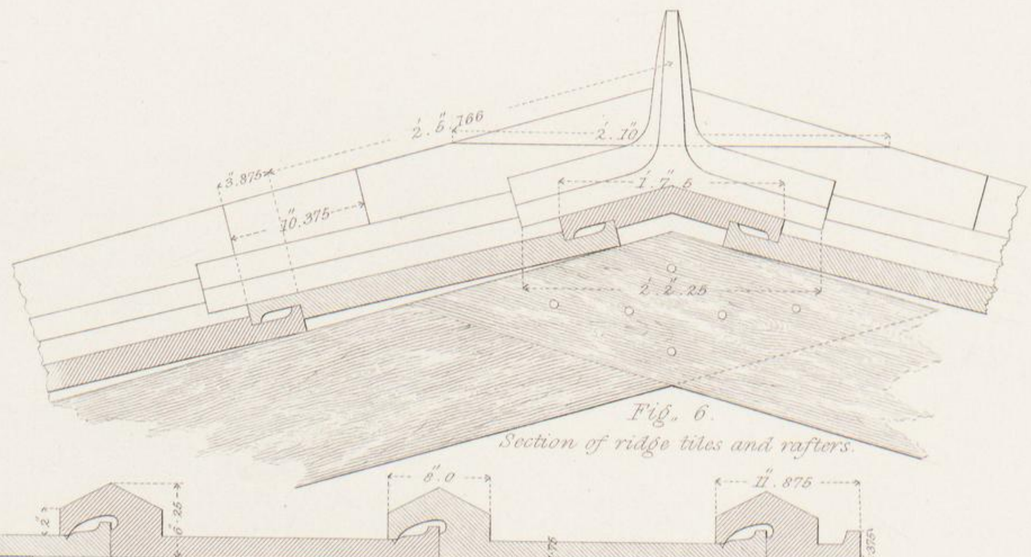


Fig. 6.

Section of ridge tiles and rafters.

Fig. 4.

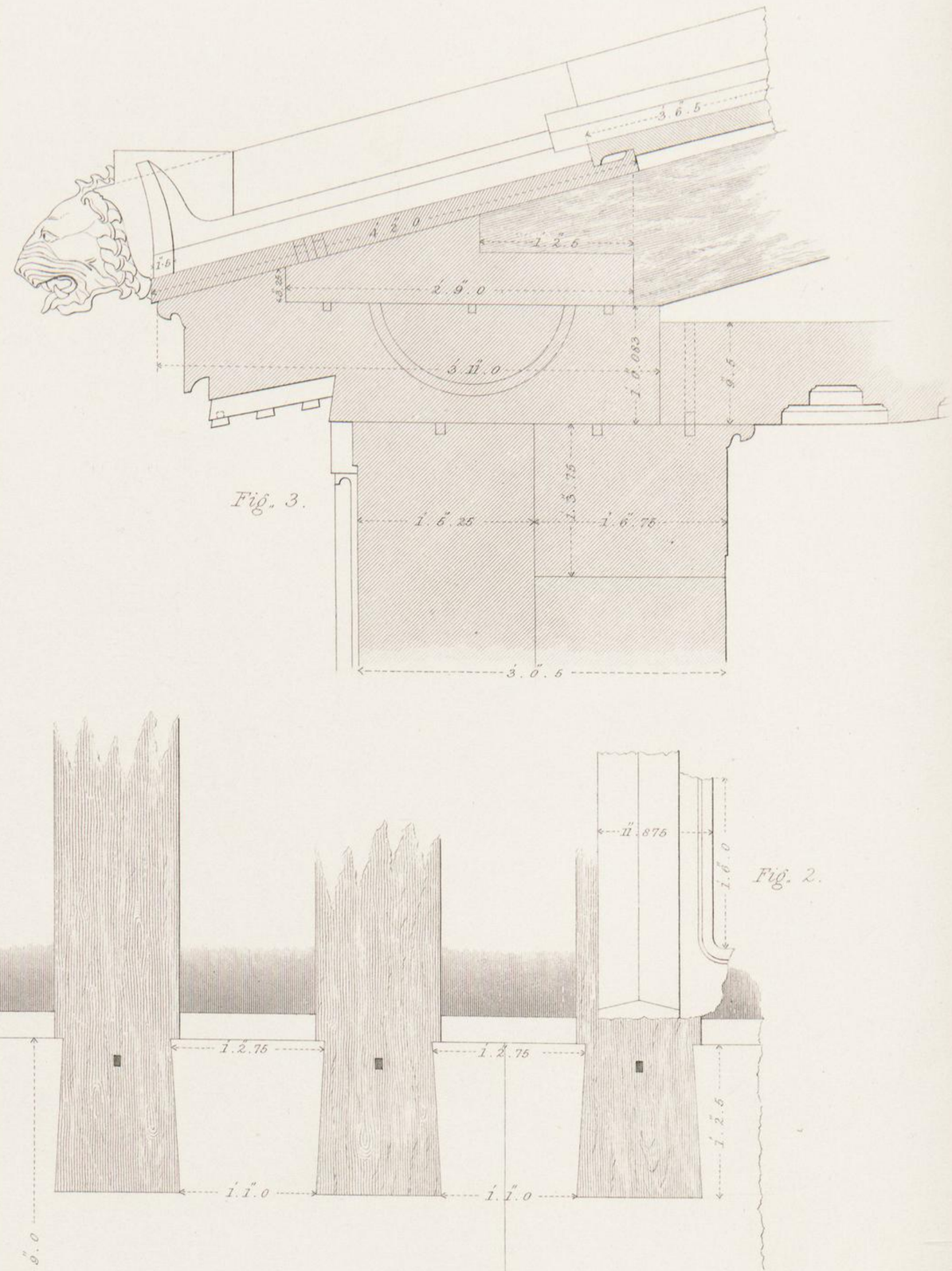


Fig. 3.

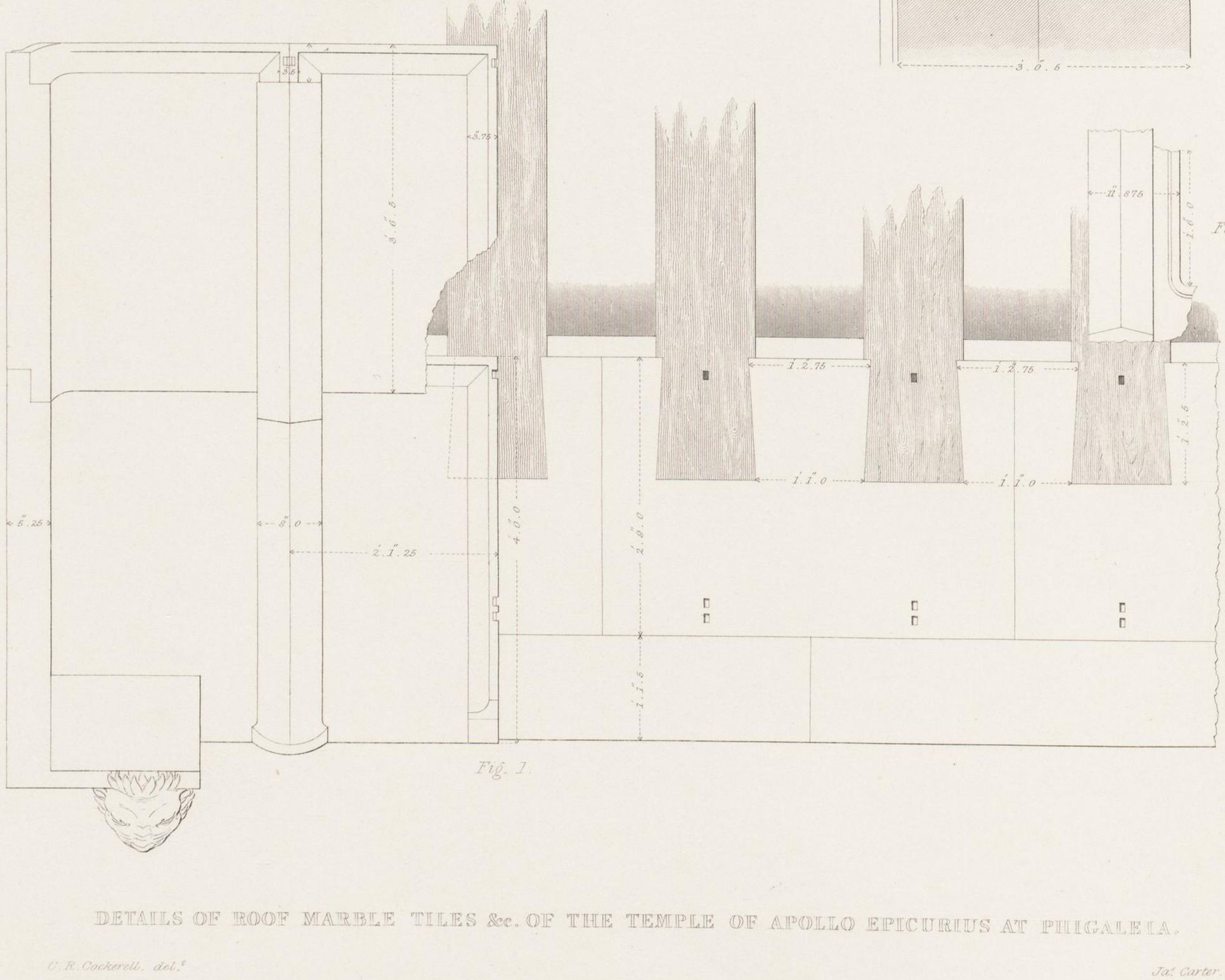


Fig. 2.

Fig. 1.

DETAILS OF ROOF MARBLE TILES &c. OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

C. R. Cockerell, del.t

Jas. Carter, sculp.t

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PLATE VI.

ORDER OF THE PERISTYLE.

The stylobate is in three steps, of which the top is the largest; their form and workmanship are unusual; these peculiarities consist in the undercutting of the steps or risers horizontally, and the marked division of the stones perpendicularly; the face of the steps is also slightly raised, and left rough from the tool of the quarry-man; these were doubtless calculated to give expression to the work. The triglyph and the metope of the peristyle were generally wrought in one stone, thus proving that the external metopes were not sculptured; in the cornice, the guttæ of the soffite were in marble, let into the stone, and run with lead and sometimes with cement. The reason of this will be evident to the practical mason, who will reprobate it as of cheap and inferior workmanship, showing the probable contract nature of much of this work, and a departure from the exact and exquisite workmanship employed in the Temples of Athens and Ægina. The cymatium of the cornice of the pediment is of marble, and of extraordinary elegance; it formed the first row of tiles in the roof (see fig. 2); the depth in the projection of the soffite of the cornice of the pediment agrees with that of the horizontal cornice, as already stated; showing that there could have been in these pediments no sculpture of entire figures, as usual in Greece.

In fig. 3 the undercutting of the glyphs, and the receding of the face of the cornice, are calculated to heighten the intensity of shadow, and are devices usually adopted towards increasing the general effect of the masonry.

Figs. 4 and 5 exhibit the undercutting of the first course of the masonry of the walls of the cella, called "orthostatæ," relieving the beds, a practice frequent in subsequent works; this appears to be one of the earliest examples of the kind, and as such is worthy of remark. In the Theseium this feature was enriched with a beautiful moulding.

PLATE VII.

This Plate, connected as it is with the two preceding, requires to be explained in this place. It is especially calculated to illustrate a peculiar merit alluded to by Pausanias in his statement that "even the roof was of marble." It can scarcely be doubted that this feature must have been a subject of particular admiration; for the tiles employed here were of marble throughout, while at Ægina only the eave-tiles over the cornice, and over the Pediment, were of marble, while the others were of terra cotta. The tiles used in this Temple were of unexampled magnitude and elegance of workmanship; and of efficacy, no less, in their contrivance, since the ἁρμός or covering tile was wrought in one piece with the tile itself, and therefore better securing the roof from the admission of wet. (See fig. 5.) The marble tiles and the ἁρμοί of the Parthenon and at Ægina were in separate pieces.

The tiles of so large a superficial surface, and scarcely two inches thick, in so friable a material will be found extraordinary; their exact correspondence and harmony with the entablature is also to be observed, the antefix agreeing with the centres of the metope and of the triglyph, which is not the case at Ægina, nor in the Parthenon, the latter of which are alternate pseudo-antefixes, having no relation to the order and structure of the real tile, but so placed as to convey the idea of larger tiles than they really are.*

In fig. 1 we have the position of the first two rows of marble tiles and the mode of fastening them to the beds of stone and wood on which they repose, showing their union with the cymatium over the pediment, and the elaborate overlapping of them in that feature, together with their explanatory sections, Nos. 3, 4, 5, and 6.

This structure of the stone and timber roof is no less interesting to the practical architect than to the

* See Penrose's Principles of Grecian Architecture, ch. vi. pl. 17.

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archæologist, and will be found the best exemplar of the Grecian method of roofing preserved to us. A course of stone breaking joints, with the cornice, offers an inclined surface for the bed of the eaves tile, and at the same time for the foot of the rafter. The surface of the rafter is dovetailed into the stone, and forms a bird's mouth, reposing on the cornice stone underneath.

The ridge tiles (Fig. 6) are worthy of remark, as is the surface beyond for the reception of the acroteria of the pediments. In figs. 5 and 3 is shown the circular groove for the lifting of the cornices to their proper places in the manner commonly found, and remarked in the description of the preceding Temple.

In fig. 3 we have the section of the cornice and tiles, and the stones forming the lacunaria of the peristyle.

In fig. 2 we see the precious fragment of the angle of the hypæthral tiles, disclosing the interesting fact that the hypæthral existed in this Temple. Unfortunately this tile was broken: it was the only indication which could be discovered; neither could the extent of the hypæthral opening be inferred from any fragments. The coping found in a similar position at Ægina was nowhere discovered in these remains.

PLATE VIII.

PROFILES FULL SIZE, OF THE CAPITAL, THE CYMATIUM AND OTHER MOULDINGS OF THE TEMPLE.

The hyperbolic curve of the capital resembles that of the Parthenon, though it has less projection. Both the size and the projection of the capital of the antæ are remarkable; it is probable that, like the same feature in the Parthenon, it was much relieved by painting, but no certain evidence of such decoration was found.

Fig. 1 shows the adjustment of the hollow marble beams and the filling-in pieces, marked E, between them: the Tenons holding three pieces together are very ingenious.

Fig. 2 gives us the profiles of the entablature of the interior order of the Pronaos and Posticum, and of the cornice, the marble beams, and the lacunaria. The mouldings are full size, and their painted ornaments in the larger lacunaria of the Posticum, were probably in gold; no colours could be discovered.

The marble step between the columns of the pronaos, full size, shows the delicacy of the mouldings in this feature.

PLATE IX.

CEILING OF THE TEMPLE.

The statement of Pausanias that the "Temple of Apollo Epicurius is all of marble, even to its roof," applies especially to the marble ceilings and to the tiling already described in Plates V., VI., VII., and VIII.

The magnificence of marble ceilings was the novelty of the day when this temple was built. Athens had shown in the Propylæa as well as in the Parthenon examples which were never repeated, much less excelled; and Pausanias, writing 500 years afterwards, still declared them the most extraordinary works in Greece. Ictinus, so justly commended for the splendour of these works, may be understood to have urged their reproduction at Bassæ; and indeed they are scarcely inferior to the ceilings of the Propylæa itself. In that celebrated work the marble beams were 18′ 3″·33 in the clear; these were 12′ 11″·375, and were hollowed in the upper side to relieve the weight and secure their duration, which was not the case in those of the Propylæa.

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Full size Doric Profiles.

Cap of Ante

Mouldings on Beam B.C.

Moulding A on top of Metope.

Cap of Col.s

Cymatium and mouldings of Pediment.

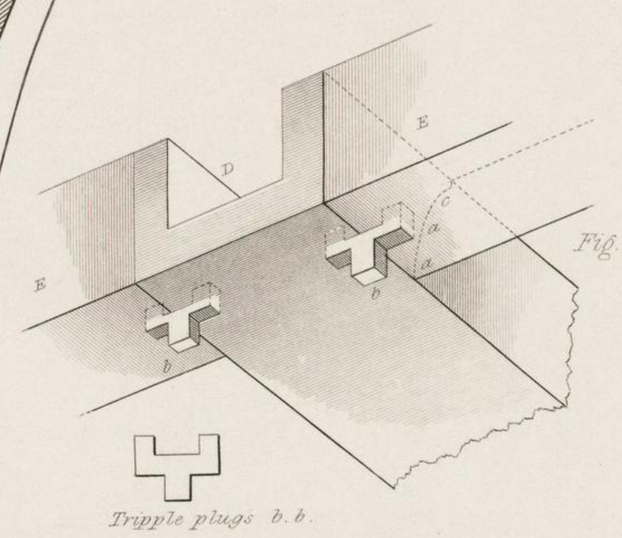


Fig. 1.

Tripple plugs b.b.

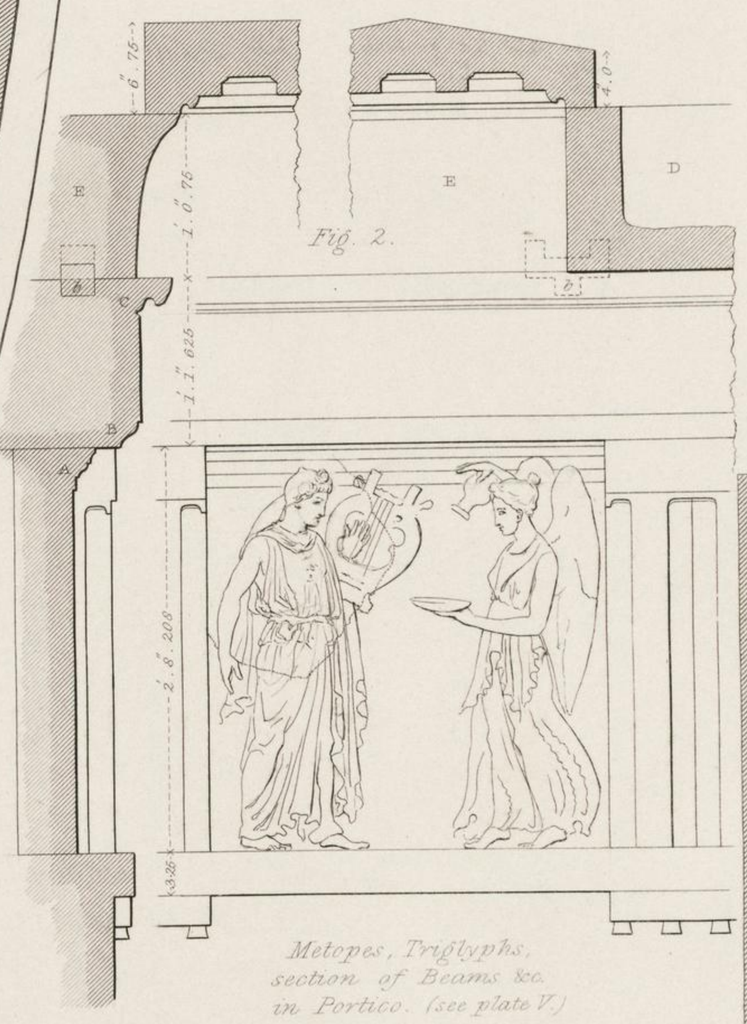
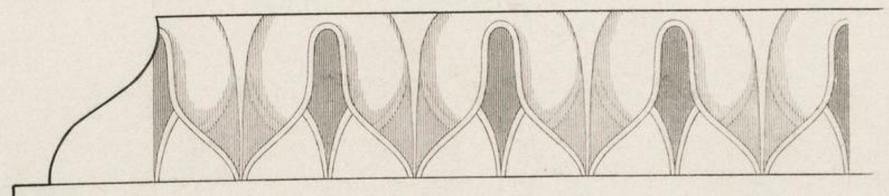


Fig. 2.

Metopes, Triglyphs, section of Beams &c. in Portico. (see plate V.)



Mouldings in coffers of ceiling of Opisthodomus.

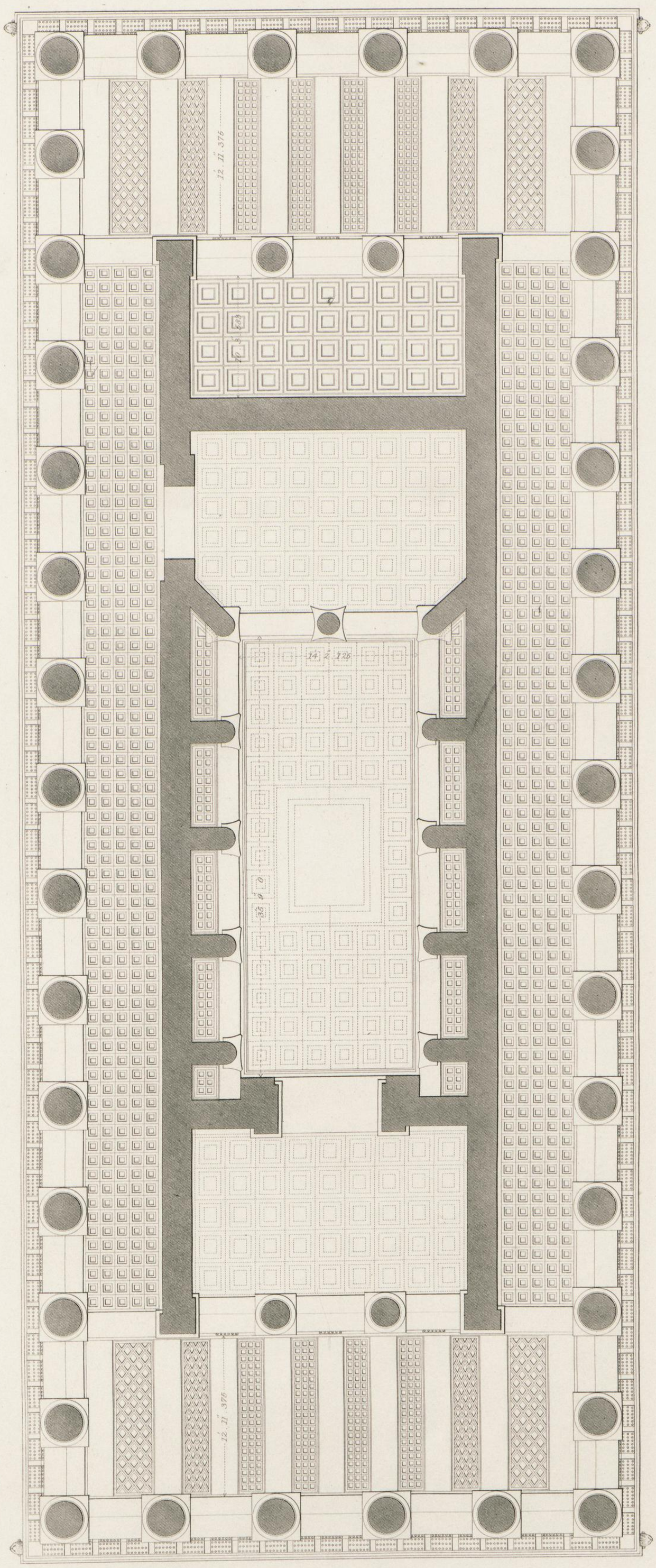
Step between Cols of Pronaos

C.R. Cockerell, del.t *Jas Carter sculp.t*

PROFILES AT FULL SIZE OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

Published by John Weale, 59, High Holborn.

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C.R. Cockerell. del.

MARBLE CEILING OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

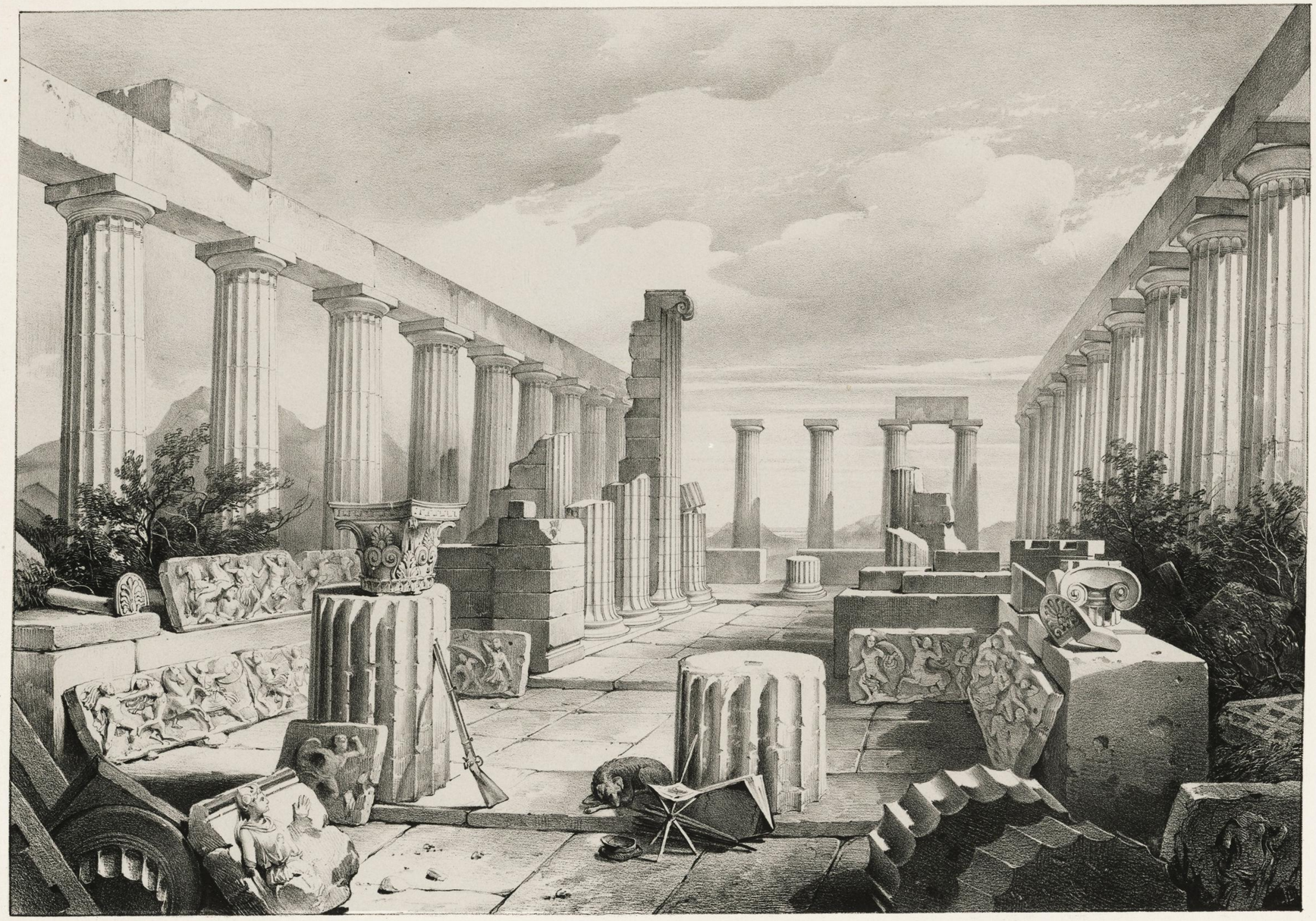
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C. R. Cockerell. del.t

SECTION SHOWING THE ADYTUM & STATUE OF APOLLO IN THE TEMPLE AT PHIGALEIA.

Published by John Weale, 59. High Holborn.

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The ceiling of the peristyle consists of stone (not marble) slabs extending the whole width of the portico and containing ten panels in each stone; the ceiling of the posticum or opisthodomus was also in marble, highly decorated with painting and gilding, and embracing the depth of the posticum, in nine stones, each of which comprised four marble panels. The three patterns of the lacunaria in the north and south porticoes will be remarked as differing from the practice of repeating the same character and pattern in other parts of the Temple and other examples. These lacunaria were also of marble, as were the small panels of the interior ceiling of the Ionic order.

Of the ceilings of the pronaos, the cella, and the sacrarium, not a fragment in marble or other material could be found; and we are left to conclude that these ceilings were in wood, as being of too large a span to attempt in a material so fragile as marble: the lines are therefore expressed in the plan by dots only.

PLATE X.

This Plate exhibits a view of the interior of the Temple, after the excavation and the fallen fragments from the superstructure had been removed from the cella, and portions of the frieze temporarily placed there.

The combat of a Greek and a Centaur opposite was the first to reveal the series of remarkable sculptures which made the principal glory and reward of this fortunate labour.

During our first visit of 1811, one of the travellers observed amongst the fallen ruins of massive stones occupying the cella, a narrow and tortuous descent sufficiently large to admit his head and shoulders, without, however, room to turn round. Into this he descended head foremost, while his companions held him by the legs, and secured his return, which might not otherwise have been easy. At the bottom he discovered a fox's nest—happily not then occupied—and on removing this the Greek and the Centaur appeared in all their energy.

Portions of the three orders employed in the interior of the metopes, the antefixes and the ceiling; are displayed, as also are the attached columns of the cella. The position of the single column, the base of which was still in its place, the sacrarium, the posticum, the southern portico, and the landscape to the south, are seen beyond. The faithful dog, the rifle, and the portfolio, announce the artists as at no great distance.

PLATE XI.

Transverse section through the cella from east to west, showing the attached semi-columns of the Ionic, the isolated Corinthian column, the sacrarium beyond, and the conjectural position of the acrolithic statue of the Deity, opposite to the eastern doorway, at which the worshippers may be supposed to have offered their morning sacrifice. In this Plate the Ionic volute has been restored, for reasons given in the description of Plate XIII. The cymatium over the cornice, the arrangement of the hypæthral opening, and of the lacunaria* over the cella, are given conjecturally. The structure of the orthostatos and the ten courses of the cella walls at A (still existing in their original beds) are here shown; as also the diminution of thickness in the height of the cella walls.

* Baron Stackelberg, in his elegant publication of these marbles, places the statue in front of the isolated column of the cella, but its exposure to the weather, rain and snow, through the Hypæthral seems to be a serious objection against such a position. The French artists place it behind the column in the sacrarium, thus obviating this objection; but the magnitude of the eastern doorway leading to this sacrarium, and the reasons already given above, suggest the placing of the statue in this position. It is also to be observed that the subject of Apollo and Diana in the commencement of the west frieze is seen simultaneously with the statue.

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PLATE XII.

LONGITUDINAL SECTION THROUGH THE CELLA, SACRARIUM, PART OF THE PRONAOS AND POSTICUM.

In this Plate the position of the acrolithic statue, the ceilings of the sacrarium, of the cella, and of the pronaos, (presumed to have resembled that of the posticum), are suggested. The rest is authenticated by the fragments found on the spot.

The peculiar proportions of the Ionic order, its spreading base and its volutes, its abacus, so analogous to that of the exterior Doric, and its diastyle intercolumniation will be remarked for their beauty and singularity of style. The intercolumniations were doubtless occupied with statues, in the usual manner, forming so many niches for their reception. The single column was of marble, together with its base and capital, while the others were of stone. The intercolumniations on either side are less by one-fourth of a diameter than the diastyle, which may be sufficiently accounted for by perspective reasons. The cap of the door-jamb shows that the door, though wider than the diastyle arrangement, formed part of the order of the whole cella ; two fastenings (marked E E) show the attachment of the door frame itself.

The sunken pavement of the cella was necessitated by the hypæthral opening above, which admitted rain and snow, by no means uncommon in these elevated regions, though it is remarkable that no trace of drains to carry it off could be discovered. The opening itself (which is here conjectural only) must have been limited in dimensions, and in the manner of a compluvium, for the protection of the marbles, while it was sufficient to admit light for the effect of the works of art deposited therein. The area for the admission of light in the actual Phigaleian room of the British Museum is relatively smaller than that suggested in this Plate.

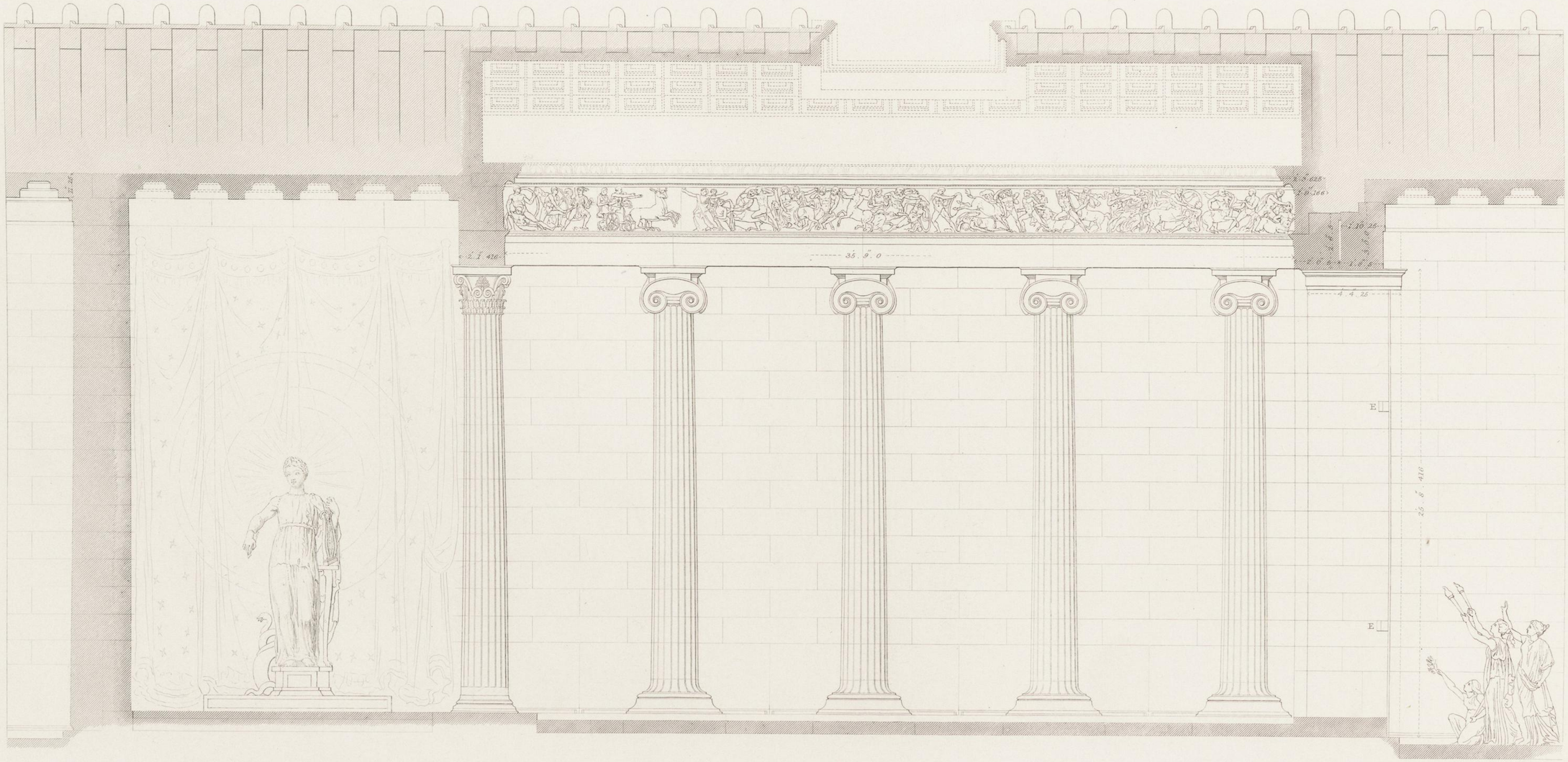
The celebrated frieze adorning this interior consists of twenty-three slabs, the longest of which, 5′ 6″·50, is here placed over the single column on the south end ; the next in length, 5′ 3″·25, is placed over the entrance door opposite. The others vary but little, being mostly 4′ 5″·50 long. It is remarkable that each stone contains an entire and distinct composition of four figures on the average, five and seven figures on the two larger stones ; these are so skilfully disposed as to show no separation of the subject, in one instance only can it be seen that one composition encroaches on its neighbour. These subdivisions, forming complete compositions in themselves, and yet united in the entire frieze, are a characteristic peculiar to Greek Art.

This frieze, often engraved, has never yet been consecutively placed in the original order : that offered here is the result of the frequent study of the marbles, their relative dimensions, and the juxtaposition of the groups. The west, east, and north friezes are here shown ; the south frieze is in the preceding plate. By this it appears that the greater part of the western side and the north end of the frieze consisted of the Centauro-machia, while the east, south, and part of the west consisted of the Amazono-machia ; it is remarkable that Apollo, the lover of the Greeks, and Diana, interposing for their protection, would be seen simultaneously with the image of the god from the eastern door. Apollo is in the act of drawing his bow, while Diana guides the car. A vacant space occurs in front of this group, which was doubtless designed with a meaning, as giving emphasis to that part of the composition, and immediately opposite to it on the east side is also a vacant space occasioned by the death of a Greek and the triumph of an Amazon.

The composition of the Hercules and the Amazon in the centre of the south end reminds us of that in the western pediment of the Parthenon in which Phidias has crossed the attitudes of the Neptune and the Minerva in the same manner. These three stones are of remarkable design and execution, and their agreement with the dimension of the end frieze leaves little doubt that they were placed in that conspicuous position of the cella.

The diagonal tendency of the lines of the sculpture of this frieze, in happy contrast with the horizontal and perpendicular lines of the architecture, displays in a striking manner the leading principle, always observed by the Greeks, in the union of these two arts—viz., the contrast of lines—the rectangular architecture with the diagonal lines of the sculpture.

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North.



East.

C. R. Cockerell, del.t

Jas. Carter, sculp.t

LONGITUDINAL SECTION OF THE TEMPLE OF APOLLO EPICURIUS SHOWING THE CELLA & ADYTUM, WITH FRIEZE.

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Fig. 4.

Fig. 2.

Fig. 3.

C. R. Cockerell, del.t

Ja.s Carter, sculp.t

IONIC ORDER OF THE INTERIOR OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

Published by John Weale, 59, High Holborn.

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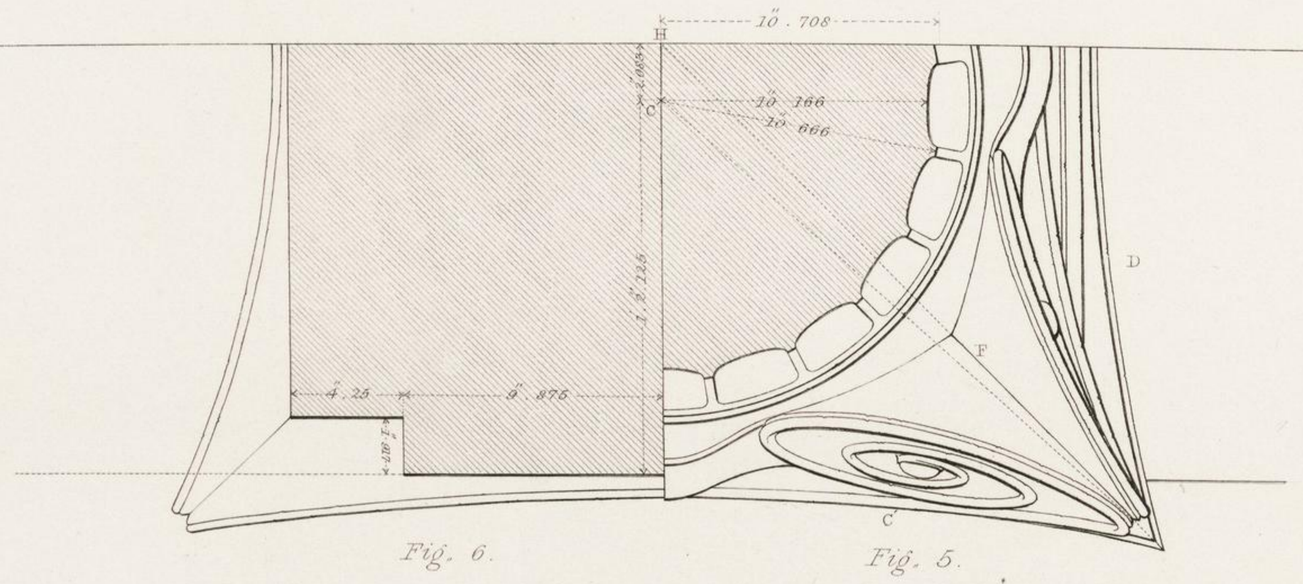
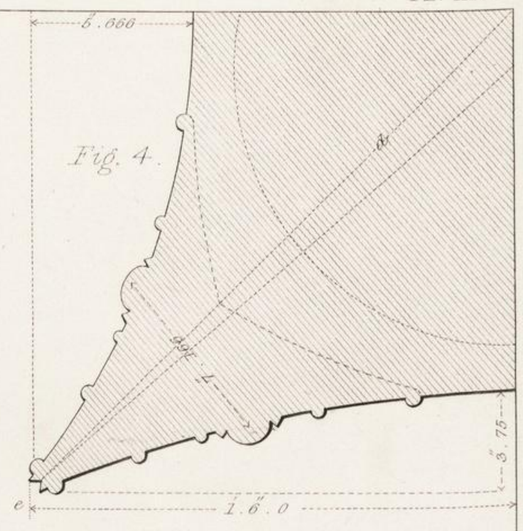
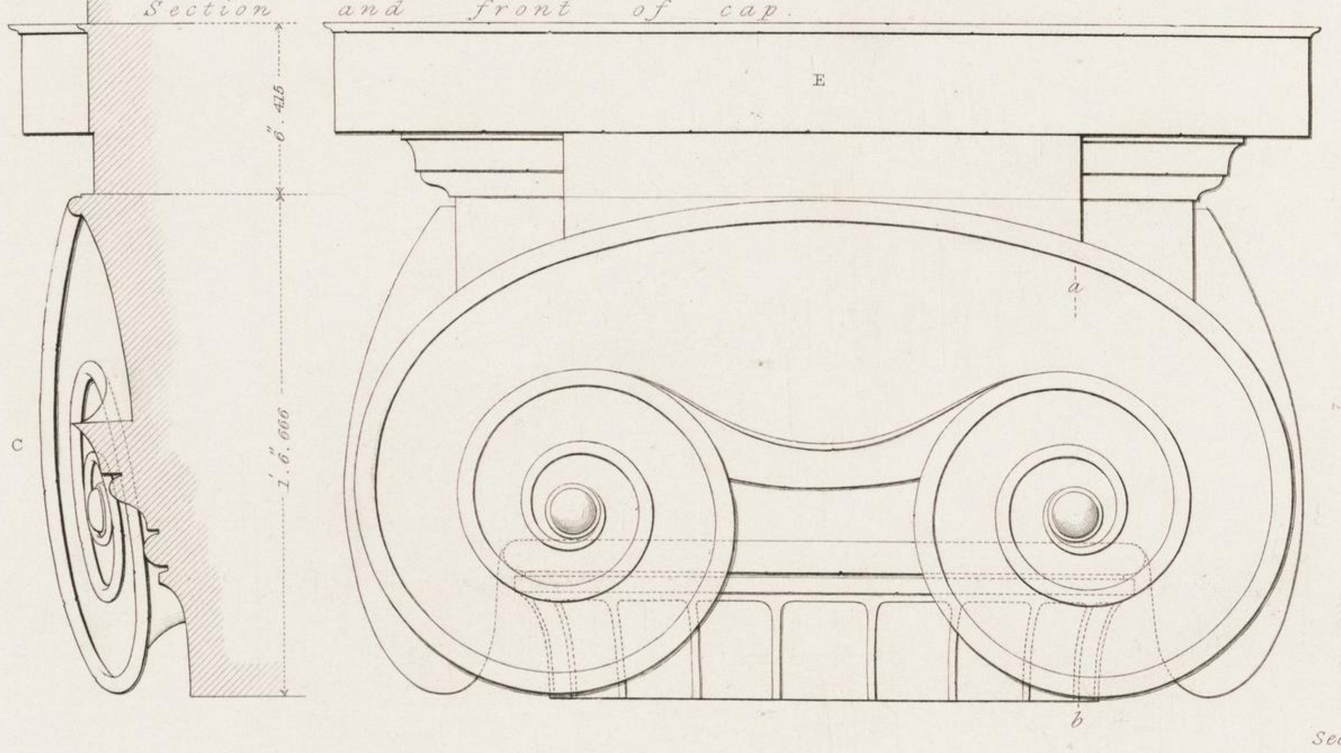
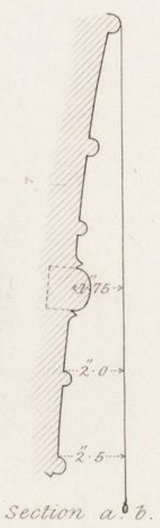


Fig. 6.

Fig. 5.







Section a. b.

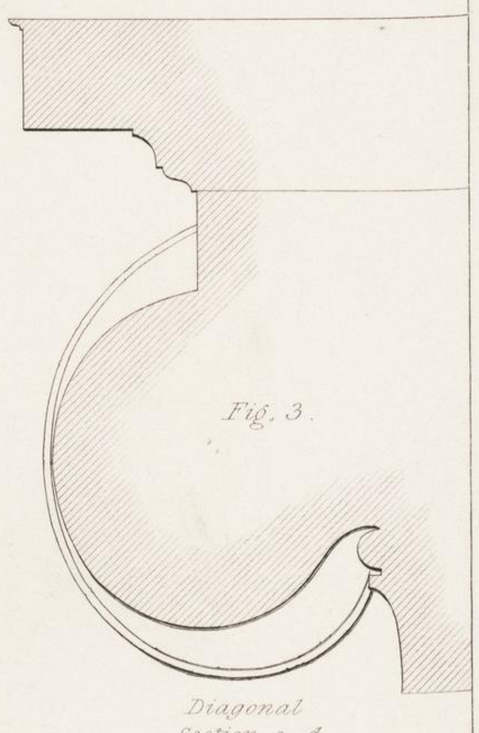
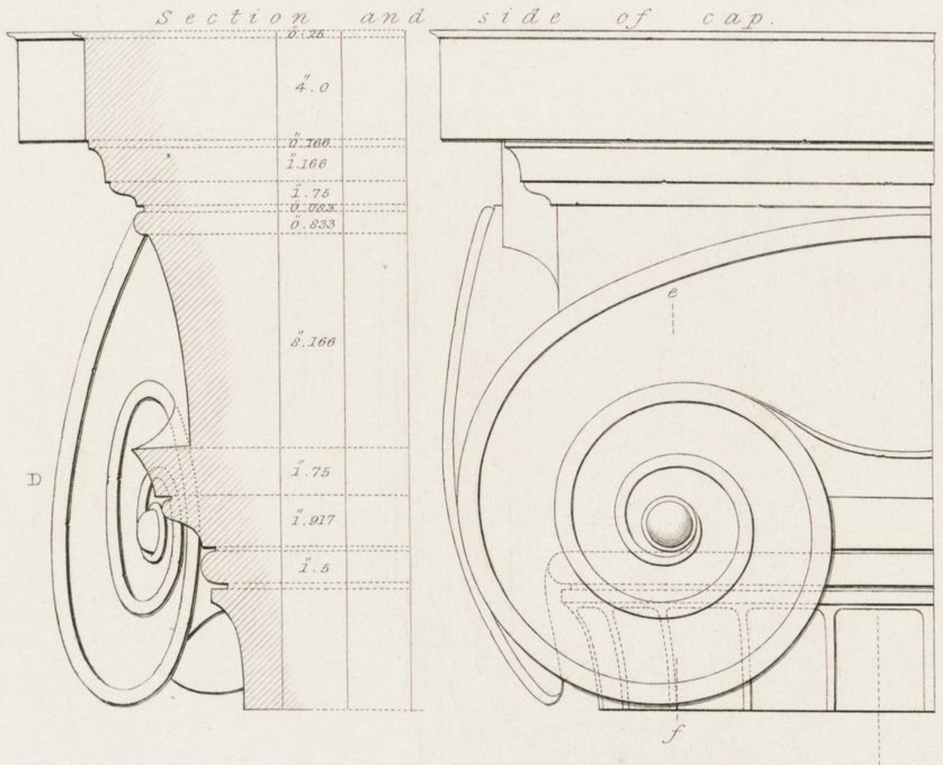


Fig. 3.

Diagonal Section c. d.



Section e f.

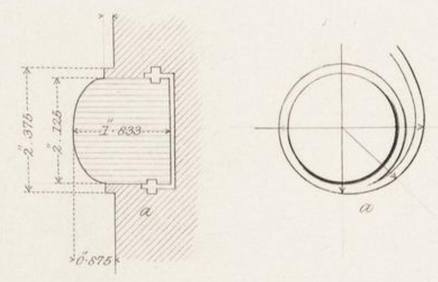
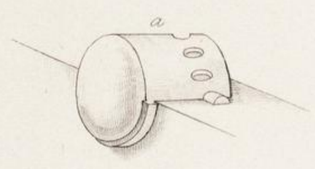


Fig. 2.



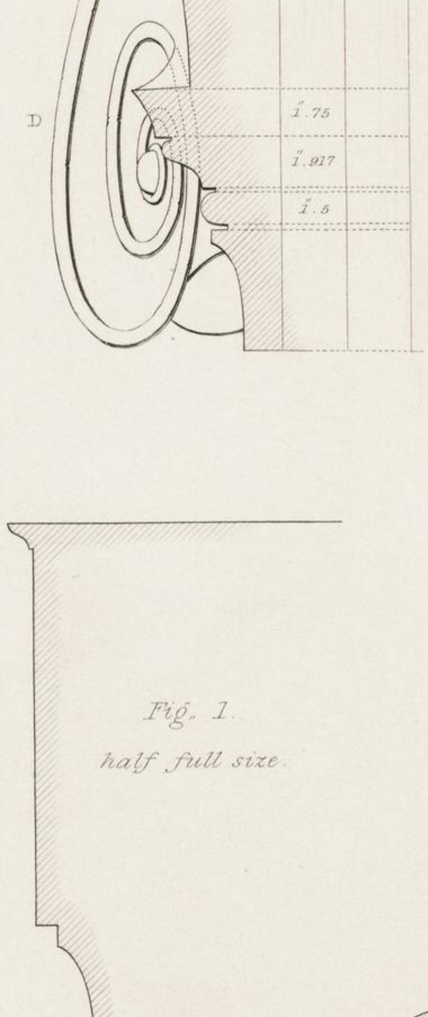
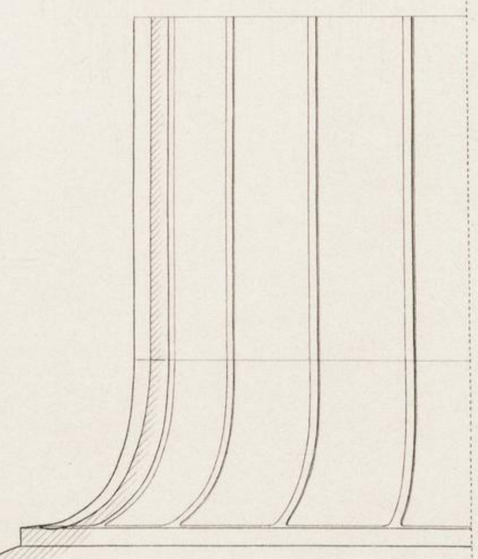
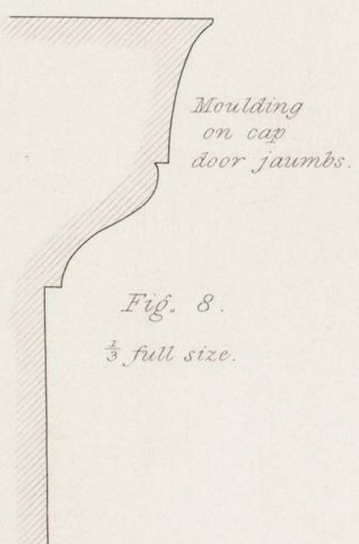


Fig. 1.
half full size.





Moulding on cap door jaumbs.

Fig. 8.
⅓ full size.

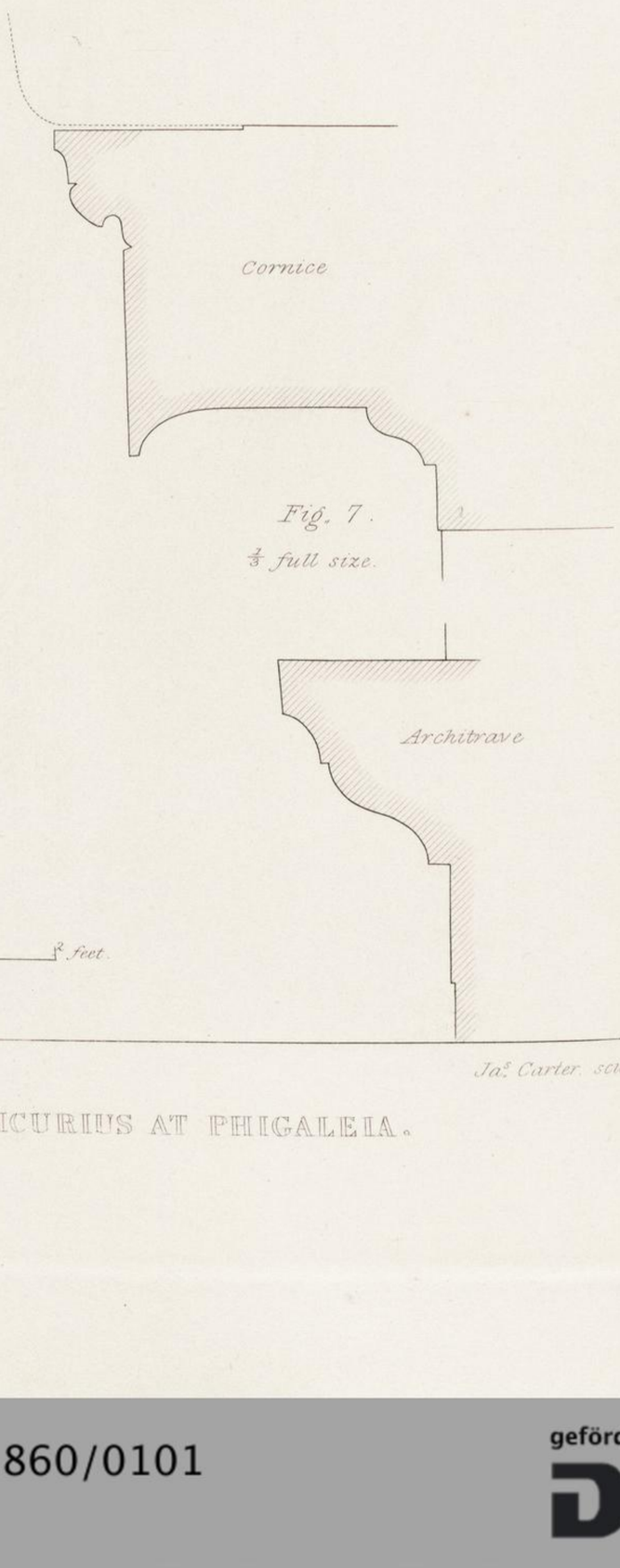


Fig. 7.
⅓ full size.

Section of wall.

12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 feet.

Scale to cap.s and base.

C. R. Cockerell, del.t

Jas Carter, sculp.t

DETAILS OF THE IONIC ORDER OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

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Baron Stackelberg has engraved these marbles in a beautiful manner, and has written a treatise on them, published in 1829; he arranged the succession of the slabs somewhat differently from that observed in these plates, according to elaborate archæological investigations founded on the various examples and authorities which have reached our times—but not according to evidences which better satisfy the architect.

The largest and most learned composition is undoubtedly that representing Hercules in the act of defeating the Queen of the Amazons. On either side are two compositions equally beautiful and elaborate, in which conspicuous acts of humanity are suggested; in the one case an Amazon interferes to save a Greek, and on the other a Greek interferes to save an Amazon. The three, measuring 14′ 2·25″, make up the entire width of the cella.

On the north end over the doorway, the group of Cæneus overwhelmed by the Centaurs (the slab next in dimension to that in the centre of the south end), together with a group in either side, make up the measure of 14′ 2·25″.

On the east side the battle of the Greeks and Amazons continues to the north end.

On the west the first stone represents the defeat of the Amazons. In the following Apollo and Diana hasten to the rescue of the Greeks against the Centaurs, who in the next slab have invaded the Temple of Latona, in order to carry off a damsel and her mother, imploring her protection. Hercules rescues them. Thence to the angle of the north-east, the battle of the Greeks and Centaurs continues.

The optical and perspective considerations in this series, and the due effect from the proper point of view are worthy of remark, as accounting for various peculiarities, for example, the shortness of the legs from the knees to the feet, the largeness of the heads, &c. The practical sculptor will at once recognise these artifices as liberties essential to a view from below at so acute an angle, imposed by the narrowness of the cella.

The subjects of these groups are identical with some of those in the sculptures of the Temple of Theseus, and described by the ancient writers. Hercules, Theseus, Cæneus, Pirithous, and Hippodamia may be plainly recognised, with many incidents altogether new. These form a distinct matter of discussion.

It is fortunate that the entire frieze should have been preserved to us. It consists of twenty-three slabs, and as many separate compositions, comprising an entire length of 100 feet 7 inches, suited to the periphery of the cella.

The slabs composing the frieze are laid upon the moulding of the architrave, and are of small thickness, each slab is fastened into the wall at the back by two bolts of bronze or some other metal. It thus appears that they were adjusted to their places after the architectural structure was completed.

PLATES XIII. AND XIV.

The Ionic order of the interior presents features of so novel a character, and of such interest, as to demand a detailed description of these two plates. It is evident that in constructing the details of this order, those considerations of optics and perspective which are so apparent in every part of this elegant work, were here most especially consulted, because seen from points of view often abrupt and at an acute angle, in this narrow cella, the form of the order would otherwise have failed. We discover, therefore, the sculptor no less than the architect, in the design of these capitals, and proof that they had been carefully modelled and adjusted to their places before they were ultimately executed in marble.

We shall admire the happy analogy of the Ionic and Corinthian Orders with the external Doric, by means

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of the solid abacus, the diminution of the shaft, and the employment of the Doric number of flutings (twenty) in broad and shallow sinkings, instead of the number of twenty-four, usual in these orders. The entablature here is lighter than the external order, being nearly equal to a fifth of the order, while in the exterior it is more than a third.

The Order exhibits the earliest example known to us of an Ionic cap on each face, as also of an abacus placed on the Ionic cap ; the only examples of which have hitherto shown paintings on vases. The front and flank volutes will be found to differ both in width and in profile. At M. Fig. 3, an upright joint is observed, showing the extent of the abacus B less prominent in the back than in the front; these half volutes, C, were fixed in separate stones, and not having been found, led to the belief that they never existed ; but the discovery of the abacus above (Fig. 1, Plate XIV.) established the fact. The square portion at the top of the volute in front (and not in the side) will be understood on considering the point of view from which they were respectively seen, and the necessity of supporting the abacus. The base (Fig. 3) is as remarkable for profile as it is for grace in its application to the parastas. It will be observed that while the plan of the parastas, or shaft, is only 180° of the circle, that of the base is equal to 300°. This extension is strikingly agreeable, and is no less necessary to the effect of the whole base. We should remark here, that the cymatium indicated was not found, although the upper surface of the cornice gives evidence of its existence by the usual sinking to relieve the pressure on the moulding of the cornice. The enrichment on the moulding of the architrave has been added by the engraver, in conformity with the Greek practice in such cases.

These peculiarities are further explained in Plate XIV. Fig. 4 shows that the plan of the cap was set out from an artificial centre (not that of the shaft), and that the curvature of the two faces was diverse. Fig. 5 shows this diversity in the inclination of the front of the cap, according to the point of view from which they were seen. (See also the sections below.) Fig. 2 shows the insertion of the eye in the volute, and the mode by which it was fastened. Fig. 3 shows the section through the cap on the angle. Fig. 4 shows the plan or horizontal section through the volute.

Fig. 5 shows the soffit of the volute and the eccentricity of the lines in the two fronts.

Fig. 6, describes the section or plan of the cap at the bottom line of the abacus. The diversity of inclination of the cap in C. and D. should be observed.

Fig. 7, gives us the section of the cornice and the upper moulding of the architrave.

Above the cornice is shown a small sinking, made by the workman to prevent the pressure of the member laid upon it, and which therefore indicates the cymatium proposed in the previous Plate.

Fig. 8, gives the profile of the cap of the pilaster of the north door into the cella.

These notes will serve to show the optical considerations of the architect in adjusting this cap to its peculiar points of view, both in the front and on the sides.

PLATE XV.

DETAILS OF THE CENTRAL COLUMN OF THE INTERIOR.

Fig. 1, shows the cap as found in the Temple, the lower part being unfortunately broken away : the material was marble, and the workmanship of the utmost delicacy, each of the caulicolæ being of exquisite sculpture and diverse in its form and design. A portion of the upper stone of the columns showing the summoscape, was found (see Fig. Q) ; the base was discovered in its place. Upon the surface of the cap the clearest indications of colour were discovered, as also on the abacus. The design has been expressed in the engraving, and seems by

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Fig. 2.

Moulding on abacus. full size.

Fig. 4.

Fragment a.

Fig. 3.

Fig. 3.

Angular section.

Section of capital.

Fig. 1.

C. R. Cockerell. del.t

J.s Carter. sculp.t

CAPITAL OF THE ISOLATED COLUMN, FRIEZE &c. OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA.

Published by John Weale, 59, High Holborn.

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VIEW OF THE TEMPLE OF APOLLO EPICURIUS AT PHIGALEIA, FROM PAULITZA.

WITH FRAGMENTS OF THE ACROLITHIC STATUE. (HALF SIZE).

Published by John Weale 59 High Holborn.

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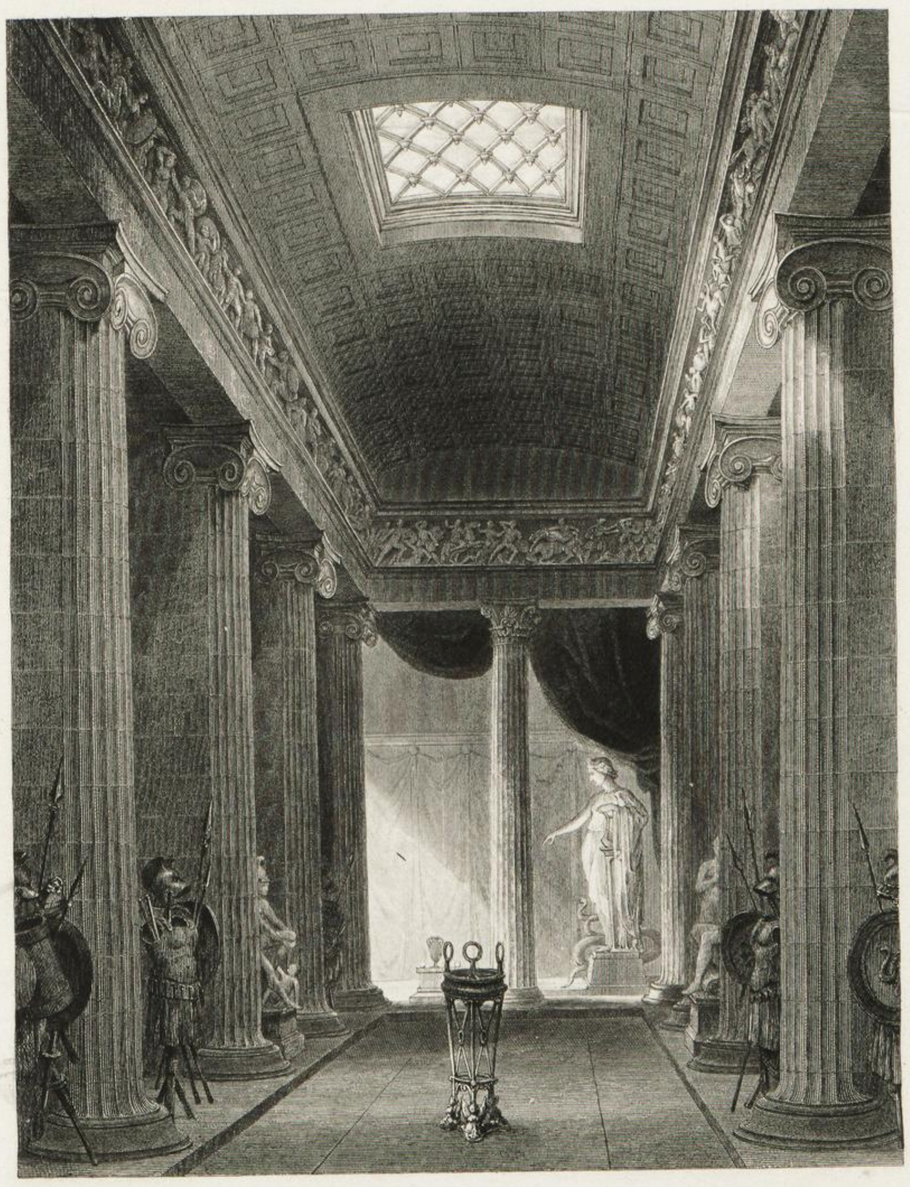
a different hand from the original work. The section shows that the soffit of the architrave, (1′ 8·375″ in the Ionic) is here 2′ 1·416″. The base is of the utmost delicacy, and very different from the Ionic ranging with it. It is unfortunate that the caps in the adjoining angles of the cella were not discovered. The magnificent combat of Hercules with the Queen Penthesilea above, has been already cited as probably having occupied this central position.

PLATE XVI.

VIEW OF THE TEMPLE FROM THE ROAD TO PHIGALEIA, FROM THE DRAWING OF THE BARON STACKELBERG.

Below are the fragments of the hands and feet, and portion of the lyre of the acrolithic statue of the god, in half size, found in the sacrarium : in the hand and foot to the left are seen the attachments by which these marble members were fastened to the wooden statue ; these fragments are now in the British Museum.

The vignette on the title page describes the scene of the excavation during the progress of these discoveries.



Interior of the Temple at Phigaleia.

BRADBURY AND EVANS, PRINTERS, WHITEFRIARS, LONDON.

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MEMOIR

ON THE

SYSTEMS OF PROPORTION

EMPLOYED IN THE DESIGN OF THE

DORIC TEMPLES AT PHIGALEIA AND ÆGINA.

ADDRESSED TO

C. R. COCKERELL, Esq.,

BY

WILLIAM WATKISS LLOYD.

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THE

DORIC TEMPLES AT PHIGALEIA AND ÆGINA.

I HAVE received with great pleasure your suggestion to throw together a few remarks on the system of proportion that, in the course of my survey of the best works of Greek architecture from this point of view, I have found to prevail in the Temple at Bassæ. It was after I had completed to the best of my power the examination of the proportions of the Parthenon, by the aid of the elaborate measurements of Mr. Penrose, and with results which, in general outline, are before the architectural profession, that the impressions and drawings you so kindly entrusted to me gave me the welcome opportunity of extending research to the Arcadian temple which antiquity ascribed to the same Athenian architect.

The results of this portion of my investigations I will now endeavour to convey, with as much brevity as is consistent with clearness. It is, however, absolutely necessary, both for the sake of brevity and of clearness, that I should premise some definitions and some observations that will at once both explain and vindicate the system of analysis I rely on, though the full exposition of it must be reserved for another occasion.

In the first place it must be stated that those requirements for architectural harmony which concern mode of construction, arrangements, and peculiarity of style are to be understood as taken here for granted as the examination of the principles of these is another branch of the subject. It must be further understood that it is not pretended that any system of proportion can supersede or supply taste and imagination: the beauty of the Temple was a conception of the inventive mind; it was afterwards, in the effort to determine and define the conditions of this beautiful image, that systematic proportion came to aid the artist, in heightening refinements, and in overcoming the difficulties of realisation.

It has appeared, then, by abundant proof, which the present paper is intended to set forth or still further to confirm, that the Greek architects attached great value to simple ratios of low natural numbers for regulating the proportions of parts and divisions of their structures relatively to each other.

The grandeur and grace of many mediæval structures largely depend upon simplicity of proportion; but it may be doubted whether any other architects than the Greek, ever set the full and true value on the principle, not merely as convenient aid to design, but as essential to expression;—certainly none others ever applied it so consistently, so logically, so ingeniously, or with such admirable effect.

I find that the architectural quantities that are made proportionate are estimated by the Greeks chiefly in two ways, and it will be convenient to refer to such comparisons as,—

1. Rectilinear Proportions.

2. Rectangular Proportions.

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When dimensions, that are made commensurable, are measured upon portions of the same straight line, I call the proportion rectilinear. For instance, if the height of an entablature is one third of the height of the column, I say the entablature is proportioned to the column rectilinearly, as 1 : 3.

When, on the other hand, the dimensions compared are taken at right angles to each other, as when the height of a metope is compared with its breadth, I call this, for convenience, a rectangular proportion.

These are the most frequent forms of comparison : they answer to the great architectural conditions of stability and equilibrium.

It must be remarked, that the rectilinear proportions apply to horizontal as well as to vertical lines, and the rectangular no less ; but in Greek architecture at least, to vertical and horizontal lines alone ;—to the exclusion of those which may be inclined to the horizon.

The ratios employed in a particular building are comparatively few, being selected with reference to the forms required, their contrasts and gradations. Hence certain leading ratios are repeated and varied in mode of application ; they are never applied without logical propriety ; and above all the harmony of proportion is consulted by persistent selection of rectilinear proportions that conciliate rectangular, and *vice versâ*. I have elsewhere pursued the elucidation of these principles with the detail that I consider them to deserve, and with a diligence that I think is not unrewarded ; it may suffice here to render their scope and bearing familiar by rcliance on the proofs to be met with of their practical application. Interesting as it may be to find that we have recovered in them the instrument employed by the Greeks, it will be most important if it can be shown that, in making use of that instrument, they were directed by principles which are of validity to architects for all time.

The architect of the temple declined to avail himself at Bassæ of some refinements that had already been brought to great perfection,—I speak of the curvature in execution of lines intended to appear horizontal, of the axial inclination of columns, and of entasis. How far this disregard may have told injuriously on the completed work, or have been compensated for by treatment, it is now, I apprehend, unless in a few points, from the state of the ruin impossible to say. It is almost as difficult to pronounce decisively as to the value of some innovations in design that he affects and indulges in ; such are the great variety of lacunaria of the marble ceilings, and the peculiarity of some of them ; the unusual orientation of the temple, which faces the north instead of the east, as customary ; and, above all, the bold experiment of the interior, which, in some points at least, can scarcely be believed to have proved quite successful.

Something of the same disposition to strike into an original, though it should prove but a singular path, is apparent in the peculiar proportional system by which the building and its details, and especially its columns, are harmonised, and which will occupy our attention presently.

This effort, if we may not say this straining after novelty, is very alien from the genius of Athenian architecture, which, at its highest perfection, in the Parthenon, appears to have reached its elevation by spontaneous development from the less perfect precedents by renewed efforts, but still by efforts in the same direction. I therefore find it very difficult to believe the report of Pausanias, that Ictinus was the architect both of this temple and of the Parthenon, without some very important qualification. I could as soon believe that the Phigaleian and Panathenaic friezes were works of the same sculptor.

Still there are such proofs of vigorous genius in the work, salient alike in plan and details, in mouldings and principles of proportion, that it is as far from marking a stage of decadence as as of immaturity. It may be compared perhaps with some of the great works of classical music in which the genius of the composer has only to contend against his matchless command of the scientific resources of his Art.

It is in details, however, and not in principles, that the system of proportion employed in the Arcadian temple differs from that of the Athenian examples. In both localities we find the determination of all parts by ratios of low numbers, and by a select set of such ratios ; the assignment of the numerical terms of the ratios to architectural terms that have natural dependence or contrast ; the institution of these regulating comparisons

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both rectilinearly and rectangularly; and the steady pursuit of combinations of dimensions that would yield satisfactory comparisons in both these forms.

I propose, then, if I am not too far exceeding the terms of your invitation, to follow out the scheme of proportion applied in the Temple of Phigaleia, and to extend the usefulness of the illustration by comparison from time to time with the Athenian hexastyle example, the Temple of Theseus, and by occasional reference to the grand exemplar, the Parthenon. Such comparisons I hold to be essential in order to bring into relief the peculiarities of the Arcadian composition, and to preserve us from forming too narrow a conception of the system of Greek architectural proportion by mistaking an application for the principle. In some arguments also I require the protection of at least a second example. A somewhat different interest will attach to an examination of the Temple of Ægina, which is an invaluable aid for appreciating the growth and history of the Art, but to be studied most instructively after a review of the more developed example.

To facilitate calculation and comparison I have reduced the dimensions as given on the Plates to feet and decimals of a foot.

The Temple of Apollo at Bassæ then, is hexastyle, like the Theseum, and has, as we shall see, very nearly the same proportion of breadth to height; its absolute breadth however is greater by about 4·60 feet. The diameter of the columns is also increased, but in still greater proportion, and thus the general effect results in greater closeness of columniation.

The commensurableness of length and breadth on plan, which is usual in the best Greek temples, does not fail us here; and, as in the Theseum, it is taken upon the lowest, which, in this instance, is a third step.

The breadth given to this platform is two-fifths of its length.

5 : 129·732 Length : : 2 : 51·892 for breadth.

The recorded dimensions bring out 52·340 for this breadth, which appears a very grave divarication. The rule of proportion must nevertheless be insisted on, whether the difference is to be ascribed to error in setting out the work, to one of those adjustments by which the ancient architects, according to Vitruvius, modified their strict proportions either from optical considerations or to accommodate others more important, or lastly, to those inaccuracies which the nature of the stone and the state of the ruin in its bleak and encumbered position may well have rendered sometimes unavoidable.

It is remarkable that in the Parthenon the greatest departure from exact execution of a proportion that was certainly adopted in principle, occurs at this very point in the dimensions of the basement, which fails of being a just double square and quarter by an error, still comparatively a slight one, equal to 0·123.

In the case of the temple at Bassæ, the difference is reduced in the dimensions furnished by other authorities who give them without any bias from suspecting the proportion involved. Generally it may be said on the subject of such variants, that it has only been apprehended within these few years, how the Greek architect varied the proportions of even similar parts and details in the same temple, rendering it quite unsafe to assume one example of an independent member as representative of all its repetitions. This knowledge has been acquired from the highly detailed survey of the Parthenon executed by Mr. Penrose for the Dilettanti Society, and must be taken into account in all future measurements, and indeed re-measurements, of the remains of Greek architecture of the best ages.

The ratio 2 : 5 compares conveniently by its equivalent 4 : 10 with the ratio 4 : 9, which regulates the lower step of the Theseum. The plan of the Arcadian temple therefore is the longer and narrower, the length being twice and a half the breadth, instead of twice and a quarter, and it has accordingly fifteen columns on flank, instead of thirteen,—the next uneven number.

The problem for the architect, of which we have here the solution before us, was to obtain an elongated ground plan, suitable for his conceived effect and of definite proportion, which would divide into columniations equal on

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front and flank, and give an odd column to the flank. In point of fact, the average columniation on flank is less than on the front by about 0·10 of a foot. Had the definite proportion of the plan been taken upon the top step as in the Parthenon, the difference would have been still greater, as a dimension equal to the projections of the steps would have been distributed among fourteen flank columniations, but only among five on either front.

The difference that was admitted was probably regarded as advantageous to effect, and treated accordingly ; it appears to have been allowed influence in modifying the proportions of the flank columns, of which it seems clear that the capitals were somewhat smaller than those on the fronts, and together with other systematic irregularities already alluded to, contributed, I believe, to a true architectural *morbidezza*.

From the aspect of the dimensions compared, I have little doubt that the exact absolute size of the temple was fixed by a dimension of 50 feet assigned to its breadth, though where exactly taken it may not be profitable to speculate. The breadth of the Theseum was made four-ninths of the 100 Attic feet, the sacred Hecatompedon, that exactly measures the top step of the Parthenon.

The next great circumscribing dimension to be sought, is the height of the front. In the Parthenon, this height is proportioned relatively to the breadth of the stylobate measured along the top step ; the grand vertical dimension is thus made correlative to the horizontal dimension of that part wherein resides the responsibility and therefore the expression, of solidity and accuracy of level. In the Theseum, again, the same terms appear to be placed in comparison, and in the ratio 3 : 4, and to this proportion, there is a very close approximation in the temple at Bassæ.

4 : 48·221, breadth of top step : : 3 : 36·165, to compare with the measured height, 36·014.

The proportionate stylobate in either case has to be diminished by the width of the steps, and the remainder is the breadth of the top step, from which the full height of the temple, from pavement of peribolus to apex of pediment, is derived by the ratio 4 : 3.

In both temples, therefore, this grand rectangular proportion gives a limit of loftiness, which controls and influences every subdivision in which height is involved.

It was early known that the diagonal of an oblong, of which adjacent sides have the ratio 3 : 4, is exactly as 5, and it is not unlikely that respect for the ratio on this ground, in addition to its agreeableness, contributed to recommend it for conspicuous employment.

If we compare the height thus obtained, with the breadth of the lowest step, we obtain the proportion 7 : 10, which we shall find employed in a very important distribution hereafter.

The precedent of the Parthenon further suggests a comparison of the full height and full length of the structure, and it is at least curious to remark, that the definite proportion of low numbers most nearly approached to, is the same that applies with such minute accuracy to the Parthenon, viz. 2 : 7.

7 : 125·614, measured length of top step : : 2 : 35·89, to compare with 36·014 as above.
Parthenon 7 : 228·141 do. do. : : 2 : 65·182, to compare with measured 65·185.

The grand height of the temple being gained, we have now to derive from it the height of the column by rectilinear proportion.

In the best architectural works of Greece proper, I find an affection for the rule that the height of the column shall exceed the joint height of pediment, entablature, and stylobate, and that the excess shall be equal to one aliquot part that is their common measure. Expressed more technically, the height of the column compares with the complementary height of the front as the larger term of a superparticular ratio,—a ratio, that is, of which the terms differ by unity.

Thus in the Theseum the height of the columns is measured by 5 parts out of the 9 that measure the full height of the front ; or in still another form of expression, the height the column is to the complementary height of front, as 5 : 4.

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This principle, which admits of some licences and modifications that will come before us hereafter, I esteem as one of the most elegant and effective in the system of the Greeks, so far as I can unravel it. The temple at Ægina dates before it came into vogue, and to the Sicilian builders it was never revealed ; their façades are constantly sluggish in expression, from the height of the vertical member being oppressed by the predominant dimension of the horizontals, and they lack the well-knit vigour that groups and unites all members of a composition by a single and simple ratio.

At Bassæ we obtain the height of the column by dividing the full height of the front into 13 parts and assigning 7 of these to the column and 6 to the complementary members jointly,—pediment, entablature, and stylobate :

Height of front, 36·014 ÷ 13 = 2·770 × 7 = 19·390. Height of column, measured 19·427.
× 6 = 16·620. Complement . „ 16·587.

The height of the column, therefore, though still predominant, in accordance with the rule, is relatively less than in the Theseum, the height of the complement approaching more nearly to equality. This contraction of what may be called the grand vertical interval of the front, is in harmony with the difference of horizontal interval of columns and intercolumn relatively to the Theseum, that I have already noted. Thus the comparison of the two temples shows that in each the proportions of diameter of column to intercolumn horizontally, and of joint epistylia and hypostylia to their interval vertically, advance towards or recede from equality together. In these instances at least, comparative loftiness of column and openness of columniation go together ; the grounds for choice of the exact degree in either case we can scarcely hope to fathom or divine,—it was to enable him to decide successfully such questions as this, that the Greek architect was created a genius.

In the Parthenon, the height of the column is to the complementary height as 10 : 9, still several stages nearer to equality, and again the spacing of the columns takes closer order.

It remains to trace the principles of distribution of the complementary height amongst pediment, entablature, and stylobate ; but from the nature of some of the considerations involved, it is desirable that we should first turn our attention to the proportions of the columns and their spacing, on which both construction and expression were so essentially contingent.

We have already obtained the height of the column, and the division of this by 5 gives the breadth of the abacus with great accuracy.

19·427 ÷ 5 = 3·885, to compare with measurement 3·878.

The same proportion holds good in the Theseum, both in peristyle and posticum, and, indeed, in so many other instances, that the rule has almost a claim to be regarded as a norm of the Doric order.

In the Theseum the abacus also agrees exactly with 1-12th of the breadth of the top step, a necessary result from the particular proportion of the column there, to the height of front, and of the height of the front to its breadth.

The examination of the minute survey of the Parthenon by Mr. Penrose, reveals other studious refinements. Here the breadth of the ordinary abacus of the eastern front is exactly 1-15th of that of the top step, the divisor of the step agreeing with the joint number of its columns and intercolumns. On the west front and south flank, the dimension is so far altered as to give the abacus a breadth proportioned to that of inter-abacus—to coin a useful word, as 7 : 8. The abacus of the angle column of the Parthenon is as usual larger, and it is in the breadth of this that the architect has obtained his ratio of 1 : 5 to the height of the column.

The breadth of the abacus at Bassæ does not subdivide simply the breadth of either the upper or lower step of the temple.

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It is particularly unfortunate that the condition of the columns of the peristyle at Bassæ is such that measurements of their various diameters are not obtainable with the last degree of exactness, especially as there seem to have been certain differences in the proportions on the front and flank ; and Mr. Penrose's survey of the Parthenon, well studied, teaches us above all the lesson, that these variations were made and regulated on definite principles. Much that is valuable might, however, be still recovered by a close survey under the light of the new experience. In the meantime, I refrain with reluctance, but of necessity, from the analysis of the proportions of the capitals.

Amidst whatever uncertainty there may be respecting details, there are certain points of difference between the columns at Bassæ and those of the Theseum that are decided and manifest. The chief is this, that while the column at Bassæ is both loftier and of greater absolute diameter at base, the absolute differences between upper and lower diameter and echinus, are very considerably less. Hence these columns assume a peculiar straightness and uprightness, which, at least, diminish the contrast with the projecting echinus, and so far would, no doubt, palliate, at whatever sacrifice, the disadvantage of the want of corrective entasis and axial inclination.

In many temples of the best Greek age, I have found that the magnitude or bulk of the column, at top and bottom of shaft and at greatest swell of the echinus, is regulated by proportion, not of diameters, but of sectional areas at these points ; on the geometrical principle that circles are proportionate to each other, not as their diameters, but as the squares of their diameters. At Bassæ, however, the less recondite plan is adopted of proportion by diameter in almost every comparison.

I speak, however, here with enforced cautiousness, for so great is the divarication of measurements given by different authorities, the consequence of the worn condition of the ruins, that it is rash to attempt to press them to exact conclusions. Confining ourselves, however, to the dimensions supplied by the present survey, we have,

Diameter of echinus	3·878
Lower diameter of shaft	3·787
Upper diameter of shaft	3·017

The correctness of the echinus measurement is vouched for by its agreement with 1-5th of height of column ; and that of the upper diameter, by agreement with the breadth of the anta at base, 3·013, by a transference, of which we shall have to note several remarkable examples.

Starting, then, from the echinus as the given dimension, we may derive from it by the ratio 9 : 7, an absolute agreement with the measured upper diameter of shaft.

9 : 3·878 : : 7 : 3·016, to compare with 3·017 measured.

Again, from the measured upper diameter 3·017 by the ratio 4 : 5, or let us say by its equivalent 8 : 10, we may derive 3·770, as a satisfactory proximation to the measured lower diameter 3·788.

The squares of these numbers certainly admit of comparison in ratios of low numbers with tolerable exactness, but not with the remarkable gain of simplicity and sequence that is the case in the Parthenon. The difference between the lower diameter of the shaft and the diameter of the echinus, it will be observed, is decided ; but it is still relatively too slight to be determined by direct proportional comparison. The true link between the two is the upper diameter of the shaft, to which they severally bear a simple, but a slightly unequal, proportion.

9 : 7 : : Echinus : Upper shaft.
10 : 8 : : Lower shaft : ditto.

In other words, the diameter of the echinus, less two-ninths, equals diameter of upper shaft, which latter again, plus two-eighths, equals diameter of lower shaft.

It deserves remark, that the three critical diameters which are thus intimately connected, cannot have their

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proportions expressed in low terms of a common denominator,—a scheme which involves a refinement upon that which we shall find in use at Ægina.

We must now consider and dispose of the columniation of the peristyle, and the principle upon which the spacing of the columns was regulated as affected by the degree of contraction given to the angle columniations. This contraction was a recognised condition of the style, but the amount of it was liable to be influenced by various circumstances and considerations.

The front architrave of a hexastyle Doric temple is divisable into five segments, with mouldings to correspond with the alternate triglyphs and metopes of the frieze; three of these stones, therefore, are uniform, and each answers to a central triglyph, two metopes, and two half triglyphs. The two end stones, on the other hand, differ from the rest in having at one end the moulding answering to a complete triglyph. Hence, if we assume provisionally that all the metopes and triglyphs respectively are to have like dimensions, we must deduct the breadth of a semitriglyph from each end of the architrave, and the remainder divided by five would give the lengths for the three central stones and the joints of the architrave, which, apart from other adjustments, indicate the axial lines for the four internal columns.

This process assumes that the difference of length between architrave and stylobate has already been determined, and also that a definite breadth has been assigned to the triglyph, which might easily be done at least tentatively; thus assuming that the breadths of triglyph and metope were to be as 3 : 4,—

$$\left.\begin{array}{l} 11 \text{ triglyphs} \times 3 = 33 \\ 10 \text{ metopes} \times 4 = 40 \end{array}\right\} = 73.$$

Therefore 3-73rds of length of architrave would give the triglyph, and 4-73rds the metope. Notwithstanding this adjustment, the position of the angle triglyph relatively to the angle column, is necessarily abnormal, as from the difference of diameters the centre of the column falls nearly plumb below its inner edge, instead of below its centre, as is the case with the other four columns by the systematic arrangement. For the same reason the second triglyph from the angle fails to coincide, as in the other instances, with the centre of the intercolumn, as the diameter of the angle column encroaches on the intercolumn by the lateral distance between its axial line and that of the triglyph above it. This encroachment was farther enhanced by the additional thickness which, from optical considerations, was given to this column, and was not fully compensated for even by an addition of breadth usually given to the angle triglyph and metope.

The greater the thickness that is given to the columns generally, relatively to the intercolumn, the greater does the proportionate contraction of angle intercolumn become if the strict systematic division is adhered to; because this intercolumn suffers by the increment of three semidiameters, while the others are severally responsible only for two.

It was in order to soften off the harshness of the unavoidable anomaly of the angle column, that the Greek architect subdued the contrast by imparting gratuitously a share of the same anomaly to each of the others. Bassæ scarcely affords the measurements that will enable us to follow out all the refinements here, or to judge what new, what old, were applied; enough, however, is found to certify the principle determined in the Parthenon; there, either by small differences of columniation or spacing of the columns, or by remarkable differences in lengths of architrave stones, the triglyphs rarely, if at all, fall over the exact centres of the columns, and rarely over the centre of any intercolumn; the plumb line from the apex of the pediment does not divide the central intercolumn equally, and the angle intercolumns themselves become not only anomalous, but unequal in their anomaly. Whatever the varying length of the architrave stone, it is usually divided accurately by a central triglyph, which thus makes pairs of metopes equal; but this rule is modified over the angle intercolumns, and also in the centre of the front where the triglyph is brought accurately under the apex of the pediment, at the expense of making the adjacent metopes unequal.

It therefore appears, that while the division of the frieze gives a general limit of spacing for the columns, it does not determine it rigidly, and that modifications quite sufficient to affect expression and proportion are admissible without infringement of it.

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In point of fact, the regulating proportion of breadths of triglyph and metope in this temple, as in the Theseum, seems to have been 5 : 8.

Breadth of triglyph, 1·756 ÷ 5 = ·351.
Ditto metope, 2·784 ÷ 8 = ·348.

The same proportion rules in the pronaos.

In the Theseum and at Ægina, the spacing of the columns of the front is managed in the same way ; the top step, from angle to angle, or from fillet to fillet of columns, is divided into four parts, and two of these are given to the two columns and three intercolumns of the centre, while one part at either end is occupied by a pair of columns and their intercolumn. Deduct two diameters from the central space and the remainder divided by three gives the ordinary intercolumn.

When this system becomes unavailable, as at Bassæ, from the increased diameter of the columns which tells disproportionately on the angle intercolumn, another presents itself naturally ; a deduction is made from the length of the step equal to the increase required to be given to the angle divisions, and the remainder is then divisible by four as previously.

The amount of deduction depends on the degree of closeness designed for the columniation, and cannot be fixed absolutely till its effects on other proportions is determined. Taste must decide generally what degree of contraction is admissible or indispensable, and may help itself by experiment and trial of a variety ; it is easy afterwards to modify the difference chosen to some proportionate part, either of the diameter of the column or the triglyph, or the breadth of the top step.

From the best results I can obtain from the measurements, it appears to me, that the angle contraction at Bassæ was regulated with reference to breadth of semitriglyph, on the principle I have last described, and the same which brings out with the closest accuracy the columniation of the Parthenon.

There was another important consideration, however, that might have influenced the last decision as to the angle columniations, and this was the relation to be effected between the distribution of the columns on plan, and their height.

It was an important object with the Greek architect to assign a height to the column which should not only compare with complementary height in rectilinear proportion as we have seen, but also harmonise rectangularly by equality to some marked division of the colonnade on plan.

In the Theseum the symmetry lies between height of column and the dimension from the centre of an ordinary column to the further margin of a third.

In the Parthenon the dimension compared includes three entire diameters, and their pair of intercolumns. At Phigaleia the scheme agrees with the Theseum, except that a column and columniation by the angle are included, thus :—

From north-east angle of step to axis of third column 19·60
From north-west angle of step to axis of third column 19·48
} To compare with measured height of column 19·427.

On the flank the comparison is disturbed by the diminution of the columniations ; but, relying upon some other examples, I believe that the architect had in view here a comparison between height of column and a breadth measured along the architrave instead of the stylobate ; in fact, the dimension from the centre of an ordinary abacus to the further extremity of the third beyond : thus,

Average flank columniation, 8·788 × 2 = 17·576 + 1·939 semi abacus = 19·515.

If, instead of average, we take particular pairs of columniations, we find several that yield almost an exact result.

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It will easily be seen that in the process of such comparisons and in the struggle to conciliate several advantages, the artist may frequently be led to try back upon dimensions already considered as fixed, and to take new proportions for the diameter of a column, triglyph, abacus, angular or ordinary columniation, in order to seize a still happier combination. The inspiring idea lives through unchanged, but in respect of every detail no one could be considered as absolutely decided until all were decided. The height of the column could not be settled by a rectilinear proportion independently of the sanction of a rectangular symmetry, and this was liable to be affected by the particular diameter of the column, both in itself and as necessitating certain speciality in the columniation by the angle, and demanding a desirable proportion to intercolumn.

Intricate as all this may seem to those who follow the process for the first time, it is certain that a little practice will give conviction of its logical coherency, and such familiarity with the properties and proportional capabilities, so to speak, of the available numbers, that the mind will constantly glance over at once the combinations at command, and seize preferential conclusions without staying to render account to itself of the stages of deduction.

The process, then, ultimately hit upon, which gave due adjustment to the angle intercolumns, and also accommodated the required symmetricism with the height of the column, appears to have been this ;

Breadth of top step $48{\cdot}08 \div 5 = 9{\cdot}6016$ for primary segments ; of these, three are subject to diminution in favour of the two external segments, which have each to receive, not like the rest, two semi-diameters of columns, but one ordinary semi-diameter and the full diameter of the angle column, and that an increased diameter.

Deduct 1-15th from full breadth of top step, and the remainder divided by five will give the ordinary columniation, which, plus the semi-deduction, will give the segment of the step for the columniation by the angle;

$48{\cdot}08 \div 15 = 3{\cdot}205$ full deduction ; $3{\cdot}205 \div 2 = 1{\cdot}602$ semi-deduction.
$48{\cdot}08 - 3{\cdot}205 = 44{\cdot}875 \div 5 = 8{\cdot}955$, ordinary columniation
$8{\cdot}955 + 1{\cdot}602 = 10{\cdot}557$, angle segment of steps ($10{\cdot}632$, or $10{\cdot}701$).

This result agrees as closely with the actual distribution as the case admits of, in consequence of those minor irregularities in spacing the columns, of which I have indicated the plan and consequences in the case of the Parthenon.

On the south front the division seems to be thus :—

S.-W. . . 10·570 . . 9·094 . . 8·895 . . 8·888 . . 10·632. . . S.-E.
< . . . . . 24·111 × 23·967 . . . . . >

Hence, as in the Parthenon, the central columniation is not divided equally by the axis of the building ; but the comparison cannot be carried further, as we do not possess measurements of the lengths of architrave stones.

To return for a moment to the proportions of the column, we have found that its diameter has a certain dependence on the abacus, but that dependence was not selected without consideration of the proportion that would result between diameter and intercolumn, which comes out approximately, as 3 : 4, a ratio one degree more open than that adopted in the Parthenon, viz.—4 : 5.

3 : 4 : : 3·788 diameter : 5·050 for intercolumn ; and, $3{\cdot}788 + 5{\cdot}050 = 8{\cdot}838$, to compare with the front columniations given above, and with the smaller flank columniations, as 8·80, &c. &c.

This comparison, however, is so remote from minute accuracy that it is chiefly interesting as another example how readily the Greeks gave up precise commensurability between diameter of column and intercolumn, the besetting hallucination of the theorists on modular proportion.

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We now return to trace the principles of distribution of the complementary height amongst pediment, entablature, and stylobate.

The slope of tile required or favourable for watershed, gives a certain limit of height below which the pediment cannot be depressed ; but, apart from a change of pitch, its elevation was open to be modified by more or less boldness in treating the mouldings of the cymatium.

With respect to the entablature, its characteristic expression, which is that of the lintel, was consulted in Greece Proper by very consistently subordinating its height to the span of the very shortest columniation, but keeping it in excess of half the longest. In the western colonies a less exact taste usually threw the balance of the dimension the other way.

Still more precisely, the breadth of the soffite of the architrave was a dimension intermediate between the upper and lower diameters of the column and exceeded the height of the architrave ; as the height of the frieze was usually equal to that of the architrave and the height of the cornice always less than half, the entire height of the entablature becomes retained in a certain dependence on the proportion of the column.

The stylobate again in examples of purest effect, is usually reduced in height to a dimension which is less than the diameter of the column it bears, and thus aids their importance by contrast ; at the same time its height exceeds the joint projection of the steps, which, in consequence, assume the character rather of its mouldings than its elements.

These limits, however, even when strictly respected, still leave wide range for choice, and full scope for taste and ingenuity in the search for defining proportions.

In the Parthenon the joint height taken for the stylobate and the entablature on flank, where it is increased by the returned fillet of the cymatium, is equal to half the height of the column.

In the Theseum the height of the flank entablature was enhanced by the return of the complete cymatium of the pediment along its entire length, and here again the joint height of this entablature and the stylobate is just equal to half the height of the column. In other words, in the Parthenon and the Theseum the column claimed two-thirds of the height from the pavement of peribolus to top of the flank cornice. The distribution was then completed in the Theseum by dividing the difference between the entablature and the stylobate in the ratio of 3 : 1.

At Bassæ the cymatium does not return along the flank cornice, but its lines are represented by the closely-set antefixal ornaments, and a vertical dimension including these, furnishes at least a very close approximation to the ratio, 2 : 1, though I am not disposed to insist on the comparison.

However this may be, the measurements enable us to trace that the height of the entablature on front fulfils its proportionate conditions by being made equal to one-third of the height of the column.

19·427 height of column, ÷ 3 = 6·475, to compare with 6·434, the measured height.

The proportion thus chosen conciliates, and may probably be taken in preference because it conciliates, a rectangular symmetry with a marked segment of the entablature in a form that admits of many variations, but is seldom absolutely lost sight of. In the Propylæa at Athens the height of entablature just equals half the central ditriglyphal columniation ; in the present instance it divides an extent measured along the architrave, that includes a columniation and an abacus. Thus—

Columniation 9·094 + abacus 3·878 = 12·972 ÷ 2 = 6·486.

The regulation of the entablature by this proportion has the further advantage of leaving a dimension that, being divisible between pediment and stylobate in the ratio 3 : 1, gives a dimension for the stylobate which

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compares with the diameter of the column very nearly in the ratio 2 : 3, or with the more variable intercolumn in the ratio 1 : 2.

3 : 2 :: 3·788, diameter of column : 2·524
2 : 1 :: 5·100 intercolumn . : 2·560
} to compare with the executed dimension 2·490.

From this latter dimension the projection of the steps is derived by the ratio 5 : 6.

6 : 5 :: 2·490 : 2·075 to compare with 2·059.

This is the process employed in the Parthenon, and with the same order of differences, though in other ratios, and with most satisfactory exactness.

The intercolumn, therefore, exceeds the diameter of the column by a third,—the diameter exceeds the height of the stylobate by one-half,—and the height of the stylobate exceeds the projection of the steps by one-fifth.

It thus appears that the complementary height of the front, 16,620, left after deduction of the height of the column, is first subject to deduction of a dimension for entablature equal to one-third of the column. The remainder is then again divisible in the ratio 1 : 3 for dimensions to be assigned respectively to stylobate and pediment.

	Deduced.	Measured.
Pediment	7·617 + 0·050 =	7·667 ÷ 3 = 2·556.
Entablature	6·464 − 0·030 =	6·344.
Column	19·392 + 0·035 =	19·427 ÷ 3 = 6·476.
Stylobate	2·539 − 0·053 =	2·486.

The differences of calculation and measurement are more serious here than we are accustomed to meet with in the Parthenon, but I have full confidence in the process, and observing that the enhancements are given to the pediment and the column, I conclude that, errors apart, they are adjustments of the same nature as the slight difference which constantly disturbs exact proportion between architrave and frieze.

The ratio of 1 : 3, which, as we have seen, determines the height of the entablature relatively to the column, and approximately the height of the steps relatively to the pediment, has yet another important function to perform in the distribution of the entablature, and it regulates the height of the cornice relatively to the frieze.

The following is the proof :—

Measured height of cornice	0·937
„ frieze	2·750
„ architrave	2·730
	6·417 ÷ 7 = 0·9167
	3
	2·7501

It will be noticed that the frieze is exactly equal to three-sevenths of the entablature, but the cornice is somewhat more than one-seventh ; exactly as much more indeed as the small dimension 0·02, by which the frieze exceeds the architrave.

It is usual to find the Doric architrave slightly exceeding its frieze in height ; here a difference is given in favour of the frieze, by reducing the architrave very slightly below its calculated dimension, and giving the difference not to the frieze but to the cornice.

The cornice of the Theseum is thicker proportionately than that of the Temple of Apollo, being as 4 : 9 in relation to the frieze, to compare with 3 : 9 (= 1 : 3). From the closer columniation at Bassæ I should have expected a relatively heavier cornice, but I suspect the explanation is to be found in the desire to give

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importance by contrast to the singularly developed cymatium and cornice of the pediment, besides the necessity for extra strength in the Theseum to carry sculpture in the tympanum.

I may mention that the joint height of column and entablature on flank compares with the length of the lowest step, the proportional of the plan, in the ratio 1 : 5, and with the breadth of the same in front, in ratio 1 : 2. These are necessary results from the ratios that link together length and breadth of plan, breadth and height, height of column and complement, heights of column and of entablature ; from this point of view the combination may have its interest, but for the rest I am not disposed to ascribe to it any value in effect, as the upper and middle step are not included in the dimensions compared, and between which they are interposed.

I will now proceed, as proposed, to give a summary of the remarkable sequence of proportions of the columns in the Pronaos and Naos ; the principle applied will prove an illustration, and at the same time an extension, of the system already traced in the design of the peristyle.

First of the harmony and inter-independence of the orders one with another.

The upper diameter of the Peristyle column, 3·017, furnishes a breadth for the anta at base 3·014, with very great exactness.

The same dimension, with a very slight increment, was adopted for the lower diameter of the column of the Pronaos, viz., 3·028, and from this its upper diameter was derived by the ratio 5 : 4, as in the peristyle column.

5 : 4 : : 3·028 : 2·422, to compare with the stated dimension 2·392.

This result is less exact than is usual or desirable, but I have no doubt of the proportion intended wherever the error, which the increment alluded to increases, may ultimately lurk.

The columns of Naos and Pronaos are connected by the same proportional scheme that links those of Pronaos and Peristyle. That is to say, the lower diameter of the Ionic column is taken from the upper diameter of the column of the Pronaos ; 2·230 to compare with 2·392 ; a more exact result would probably be obtainable by comparison with the Doric diameter within the flutes.

The ratio 5 : 4 again helps us to derive the upper diameter from the lower :—

5 : 4 : : 2·230 : 1·786, to compare with the stated measurement 1·777.

The Corinthian column of the centre has also the same lower diameter, and upper also, within a fraction, (1·770).

The breadth given to the abacus of the naos column is 2·680, which compares very exactly with the upper diameter in the ratio 3 : 2, and consequently with the lower in the ratio 6 : 5. Upper diameter, lower diameter, and abacus, fall therefore into the proportional sequence 4 : 5 : 6. We shall find some remarkable illustrations of this system in the island of Ægina.

The thickness of the cella wall follows the breadth of the anta below the capital, and that is equal to the breadth at base, less one-tenth. The transverse wall of the cella is somewhat thicker, namely 2·73, a dimension which equals exactly the height of the Peristyle architrave. The anta on flank also diminishes upwards by one-tenth of the breadth at base, and that is proportioned to its front as 3 : 5.

The abacus of the Pronaos is derived from that of the Peristyle by the ratio 5 : 6, thus,—

6 : 3·916 : : 5 : 3·263, to compare with 3·258 measured.

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As the upper diameter has to that of the Peristyle only the ratio 4 : 5, it results that the Pronaos capital has a greater relative projection.

In the Theseum the breadth of the abacus of the Posticum is just 1-5th of the height of its columns, and therefore, does not differ much from the abacus of the peristyle, as the difference both in height and diameter of the two columns is not considerable. The abacus of the Pronaos column at Bassæ has no available ratio to the height of its column.

Let us now examine how far these secondary orders conform to the principle we have asserted for the peristyle, in respect of ratio of height of column to complement. As, in the present comparison, there is but one shallow step and no pediment to be included in the complement, it is evident the difference in favour of the column must be much more considerable than in the peristyle ; in fact, the difference is so great that even the ratio 2 : 1, the super-particular ratio that admits the greatest difference between its terms, would not meet the case. Under these circumstances, I find it to be the practice of the best Greek architects to take the comparison between the shaft of the column independently, on the one hand, and the complement of entablature and step plus the horizontal members of the column ; that is, either capital alone if the order is Doric, or capital and base when the Ionic or Corinthian is in question.

The height here divisible, namely, that from the pavement of the peristyle to the top of the band which answers as cornice to the Pronaos, is 24·935, which, divided in the proportion 2 : 1, would give 8·311 for complement, and 16·622 for shaft of column to compare with the measurements as given, 16·788, and 8·123.

The difference of 0·166 here between measurement and calculation is certainly something considerable ; but I am too confident of the principle to ascribe the departure from it, so far, to anything else than some lapse in the measurements of decaying fragments, or rather to an adjustment in favour of another combination of proportion. From this latter point of view, indeed, we have a very reasonable explanation in the motive to make the full height of the column not nearly, but absolutely, commensurable with its lowest diameter ; by the dimension adopted it becomes so in the ratio 6:1, viz.—

18·176 ÷ 6 = 3·029, to compare with 3 027, the given dimension.

The additional height required to bring this about might of course have been assigned to the capital, and thus the more usual rule have been rigidly applicable ; that this was not done obliges us to infer that the height assigned to the capital was determined by its own and a paramount proportion. This is not at first very easy to discover, for we are baffled in all attempts to deduce it by any of the comparisons I have found to be most usual, —with a diameter of the column upper or lower, or with the breadth of its abacus. The true secret I do not doubt is this,—the height of the Pronaos capital has the same proportion (viz., 5:6) to the height of the Peristyle capital, as we have seen that the breadth of its abacus bears to that of the Peristyle.

6 : 5 : : 1·675 : 1·395, to compare with the measured 1·388.

The height that remains for the entablature of the Pronaos, after deduction from complement of the joint dimensions of step and capital, is 6·391 ; in the distribution of this the frieze is found again to exceed the architrave, but to a much greater degree than in the peristyle, viz., 0·160, a dimension considerable enough to be of value in giving increased space for the metopes which here were sculptured.

The total height of entablature divided in the ratio 3:2, gives 3·834 for joint height of cornice and frieze, and 2·556 to compare with the measured 2·548, the height of the architrave, an absolute agreement.

The cornice is now not determined, as might be expected, by direct proportion to the frieze of the Pronaos, but apparently either to the thickness of the courses below it as it is returned round the back of the entablature of the peristyle, to the height of the step (0·368) as 3 : 1 (1·135÷3=0·378), or to the breadth of the triglyphs below it.

A composition distyle in antis has of course three architrave stones ; assuming that the entire breadth of the

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architrave is divisible between metopes and triglyphs, of which the number is fixed, by a proportion between their breadths, the joints of the architrave and the actual centres of the columns then fall, by rigid symmetry, under the centres of the third triglyph from either angle. Practically, as we have seen, the centres may have been slightly disarranged designedly, both for the purpose of humouring the irregularities of the frieze, and with the effect of favouring a rectangular symmetry between the height of the column and the spacing on plan. This symmetry has been managed with great exactness, and comprises the dimension from the centre of a column to the exterior of angle of the anta that is more remote from it.

The height of the column being 18·176, the agreement, it will be seen, is most exact.

In the Theseum the comparison fails here entirely.

The full height of the interior of the Naos, measured from the pavement of the impluvium to the top of the cornice, appears to be 25·002; and the following is, I think, the scheme by which the dimension thus available was distributed among the members of the order by vertical rectilinear proportion.

Divide the total height between shaft of column and complement of order in the ratio 2 : 1.

25·002 ÷ 3 = 8·334, to compare with complement, 8·252.
16·668, to compare with shaft, 16·750.

The complementary height is divided equally between the entablature and the joint height of capital, base and step.

8·334 ÷ 2 = 4·167, to compare with entablature measured, 4·267.
to compare with capital + base + step, 3·985.

In the distribution of the entablature half the height is given to the frieze—

4·167 ÷ 2 = 2·083, to compare with 2·094;

and in the other distribution half the height disposable is given to the capital, which thus becomes equal to the frieze, and has the ratio to the height of the entablature of 1 : 2.

4·167 ÷ 2 = 2·083, to compare with height of capital, 2·090.

The remainder is divisible between the base of the Ionic column and the step, in the ratio 3 : 1.

2·083 ÷ 4 = 0·525, to compare with measure for step, 0·312.
0·525 × 3 = 1·575, to compare with base, . 1·583.

The comparative height of the step, it will be observed, shows a very considerable divarication; in fact, just enough to account for the apparent error in the second comparison above, where the step is involved.

The like dimension, as obtained for the capital, is divisible in the same proportion between abacus and volute;

0·525 : measured height of abacus, 0·534.
1·575 : measured height of volute, 1·555.

and again in the entablature between cornice and architrave,

·0525 : measured cornice, 0·570.
1·575 : measured architrave, 1·603.

If, therefore, we are content to ascribe the inexactitudes in these comparisons to secondary adjustments in design or execution, or to errors generally, we may consider the height of the order as divisible into 48 parts thus distributed; shaft of column, 32; step, abacus, cornice, 1 each; base, volute, architrave, 3 each; frieze, 4.

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This scheme of distribution may be conveniently brought under general view in the subjoined form.

Full height of order (48).

Shaft of column (32) 2 : 1 Complement of order (16).

Entablature (8) 1 : 1 Capital + base + step (8).

Cornice + architrave (4) 1 : 1 frieze (4) Capital (4) 1 : 1 base + step (4).

Cornice 1 : 3, architrave. Abacus 1 : 3, volute. Step 1 : 3, base.

The unity and the variety of effect obtained with such conspicuous economy of ratio, are worthy of all admiration.

The characteristic ratio is here 1 : 3, the same which is employed so importantly in the distribution of the order of the peristyle; viz.—

Entablature : height of column . . . .
Steps : height of pediment . . . . } : : 1 : 3.
Cornice : height of frieze . . . .

I have taken the height of the base of column to the top of the apophyge, and have no doubt of the soundness and propriety of this limit; the flutes of the shaft are carried down into the Ionic base, just as they press upward upon the necking of a Doric capital; the true logical line of division coincides with, and is marked by, the joint in the construction. So the true extent downwards of the Ionic capital is displayed in the instance before us by the unequivocal line upon which it ranges with the Corinthian capital.

The absolute dimension 25·002 reminds us again of a probable relation to the typical hundred feet, the primary unit of both Parthenon and Theseum, the Hecatompedon. Let it be assumed that one-fourth of this was in truth the dimension worked from here, and further that the standard was the Attic, which compares with the English foot as 1 : 1·0134.

The following table will then exhibit: 1. The dimensions as obtained from the executed work. 2. As deduced by proportion from the grand height as measured, viz. 25·002. 3. As deduced by like scheme of proportion from the assumed standard of 25 Attic feet.

Heights.	Measured.	Deduced from full height.	Deduced from ¼ hecatompedon. (25·335.)
Shaft of column	16·750	16·668	16·890
Complement of order	8·252	8·334	8·445
Entablature	4·267	4·167	4·222
Capital + base + step	3·985	4·167	4·222
Frieze	2·094	2·083	2·111
Architrave + cornice	2·173	2·083	2·111
Capital	2·090	2·083	2·111
Ionic base	1·583	1·563	1·584
Step	0·312	0·521	0·528
Abacus	0·534	0·521	0·528
Cornice	0·570	0·521	0·528
Volute	1·555	1·560	1·584
Architrave	1·603	1·560	1·584

We see in effect, that the height of the step was mulcted in the considerable dimension 0·209 to supply increments of, to shaft 0·082, to architrave 0·043 and to cornice 0·050.

To complete our comparison, it is now only necessary to observe, that the requisite rectilinear symmetry is obtained very exactly, by the columns being so spaced, that the dimension from the angle of one abacus to the angle of a third, both inclusive, becomes exactly equal to the height of the column.

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Let thus much have been said respecting the harmonies of proportion of the orders in themselves, and as compared and connected with each other by links of contrast and gradation. Many comparisons still remain to be made, and it would be easy to swell the catalogue of refined and ingenious combinations by descending into detail ; even the instances given would be fruitful in comment, not, I think, far-fetched or uninstructive ; but enough has been said to illustrate the general principle, and this, and not the minute exposition of all its applications, is the scope of the present memoir.

Let us now proceed to consider the further distribution of the plan, and the proportional adjustments of the apartments.

The antæ do not range either by centres or margins with the covering columns of the front, but rather hug the axis of the temple ; and in this respect, as is not unusual, they harmonise with the pair of columns they enclose, which are nearer to the axial line of the temple than the two central columns of the front. This convergence has great value in effect, and by a different arrangement the interval between the flank columns and the cella wall would have been more contracted than the intercolumns of the peristyle, a relative proportion that is systematically avoided.

By an adjustment of which I could cite various instances, but that of the Parthenon is all-sufficient, the dimension on plan, including diameter of flank column, interval of ambulatory, and thickness of Pronaos or cella wall (= 12·739), compares exactly with the dimension comprising two diameters and an intercolumn of the peristyle.

The inferior thickness of the wall, as compared with a column diameter, throws the difference of interval in the direction required.

The interior line of the cella wall, and therefore its breadth internally, being thus fixed, the next important problem is to decide the proportion of the chief apartment, the Naos. The extent of the cella towards either front, and the relative depth of Pronaos and Posticum, may be left over and made dependent upon the space remaining after the Naos is provided for.

In truth the proportion, to say nothing of the dimension, to be given to the Naos, was probably a primary consideration in the original design. To this the proportion of the general plan might well be secondary, and thus the peculiar elongation of the temple becomes explainable by the requirement of harmony with the interior of the apartment, for the sake of which it was that the temple was built at all.

Without, however, pretending to divine the order of invention, we may do somewhat to elucidate purpose, and even processes, by result.

The clear interior width of the cella being given, viz. 22·367, the transverse walls are so placed as to give a temple on the Naos proportioned to the breadth, as 5 : 2. This is the very proportion of the general plan of the length to the lowest step ; the agreement can only be ascribed to deliberate forethought, and thus the length of the chamber would be deducible from the given breadth :

2 : 5 : 22·367 : 55·915, to compare with measured 55·670.

Again the Naos was divided into two parts, the Naos proper, and a *sekos*, sacrarium, or opisthodomus, entered from an important door in the east wall of the cella, but also accessible from the Naos proper by the intercolumns on either side of a central column on the axis of the temple.

There are considerable difficulties in interpreting the purpose of this distribution of the double apartment. All the decoration discovered within the cella, whether columns, sculptured frieze, or lacunaria, have reference to the Naos proper, while the opisthodomus is sacrificed in its symmetry by the oblique abutments of the angle columns. Now the very idea of a Greek Naos was essentially that of the apartment or lodging of the God, and hence I

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cannot escape from the conclusion that the place of at least the chief statue of the God was in this Naos proper ; this would not preclude the possibility of another, perhaps an archaic statue, occupying the opisthodomus, together with sacred objects and dedications, and even subordinate statues of associated divinities, Artemis and Health powers. Indeed, as this Naos was raised to Apollo as emphatically a health-giver, I think it probable that the opisthodomus may have been appropriated to medical incubation, to the sleep of oracle-seeking patients, which in so many of such temples brought much gain to the superintendents.

The conclusion therefore to which I am inclined is, that a statue of Apollo stood in the Naos proper, and the place I should assign to it would be in front of the Corinthian column, in agreement with the views of Stackelberg, and between the fourth flank columns, counting from the door. Thus placed, it would have full advantage of relation to the two angle columns, which are distinguished, by their position, and by the more favourable display of their capitals.

Confirmation of this view may even be derived from the distribution of sculptures on the frieze ; there is an exceptional blank and break in the composition of these on both sides, just above the columns in question, and that on the right-hand frieze is formed by the chariot of the God himself. These marked separations in a series of groups, otherwise so closely and peculiarly interlaced, divide them into shorter and longer segments, respectively corresponding to the assumed distribution of floor space ; and the position of Apollo on the frieze, where he might otherwise seem to be thrust into a corner, is justified by its proximity to the statue below, the eye and focus of the sacred interest of the entire dedication.

A painting probably occupied the surface of the transverse wall of the cella ; it might be viewed independently, and would give great enrichment by mere general colour, as background, to the effect of the interior as seen displayed from end to end from the grand doorway or Pronaos.

Another question presents itself for consideration, as to the motive for the peculiar mode of engagement of the columns of the interior.

The reply to this is, I apprehend, that the architect desired to enrich his interior by columniation, but was precluded by the comparative smallness of its dimensions from introducing a free colonnade. The interior order of the Temple at Ægina encroaches so much on the width of the Naos as to give a relative tallness to the nave, that might be easily considered excessive, while the space between the columns and the wall was almost too confined for passage-way. There was thus an imminent liability for an interior order in a small temple to appear to choke up the apartment. This effect it may be thought would be avoided, if the columns were detached but placed as near to the wall as base and capital would admit. This is a collocation that was, I suspect, never adopted in the good periods of Greek architecture ; of the objectionableness of it we have abundant opportunities of judging in works of Roman date, which I think ought to be decisive on the point ; the reasons of the (as I think) objectionableness and ill effect must be discussed another time.

With the proper engaged column, as seen for instance at the west front of the Erechtheum, the case is different, and this it would seem was an available resource. Supposing such an application of the column had already been made at the date of the designer of this temple, he may have had reasons better or worse for rejecting it here. He might have had the fair ambition of originating a novelty, which, however, has had no imitators ; he may have desired greater play of light and shade than the engaged column would give him ; he may have been bound to provide such recesses as we see, whether for statues or candelabra or dedicated tripods ; or lastly, as the height available for his apartment was a limited quantity, he may have considered it desirable, in respect of proportion, to diminish its relative width by advancing the columns as we see.

This brings us back to the question of the principles on which the architect distributed the interior of his cella.

The height available was a limited quantity, and other proportions were necessarily influenced accordingly. Had the steps of the temple been fewer or lower, the difference would have been available for addition to height of interior ; but it is quite possible that in the growth of the design the stylobate was fixed at its existing height with deliberate purpose to bring out a remainder for interior height such as we have it.

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Assuming that the ridge beam of the roof was interrupted by the hypæthral opening, it would seem that the support of its ends must have depended on connection with a tie beam holding together the purlins that were continued along the lateral walls; the interval that would be left between this tie beam and the cornice of the interior order may be estimated, and it seems would be just sufficient for the beams and coffers of a ceiling of carpentry. The height thus obtained from pavement of Naos to top of cornice is 25·002, or something more.

From this dimension the height for the shaft of the column was deducible by application of the familiar system of making it just double the joint height of horizontal members and sub-members,—that is to say, entablature and step together with capital and base,—by the process we have seen; but this still leaves the full height of the column to be settled by after consideration.

The plan of the Naos proper within the columns, or more exactly on the face of the architrave, was required to have, as we have seen, the proportion 2 : 5, the same that obtains in the plan of the Naos at large, and the general stylobate of the temple. This proportion clearly was predetermined, and one of the conditions of the distribution of the interior, and the problem arises to assign such a breadth to the plan, length being abundant, as would be proportional in terms of low numbers to the actual height, which is a given and fixed dimension.

This problem might be solved with little trouble by making trial successively of the low ratios, and working out results for selection. Thus, for example, the ratios 3 : 5 : 2, would give,

3 : 25·002 height, the given dimension.
5 : 41·670 length.
2 : 16·668 breadth.

By these dimensions the columns would have been thrust close to the wall, and the length of the Naos would have so far encroached on the opisthodomus as to render it insignificant. Again the columniation of flank and centre column would have been extended, and this would have affected the height of the column which requires to be answerable to a symmetry on plan.

However, the proportions actually employed are 7 : 10 : 4; 10 : 4, is equivalent to 5 : 2, the imposed proportion of plan, and the height, length and breadth thus brought out are,

25·002 : 35·757 : 14·287.

The proportion 7 : 10, here found between height and length of Naos, we have already recognised as occurring between the full height of front and breath on lowest step.

The progression of the numbers 4, 7, 10, by common difference of 3 is manifest, and is remarkable in conjunction with the marked preference in the Parthenon for a similar principle of progression, but based on a common difference of 5.

The clear breadth of the end architrave from side to side of the Naos, comprises the breadth on plan of the central column and of two intercolumns, but it does not furnish us with elements for deducing a diameter for the columns.

Following the analogy by which the diameter of the more slenderly proportioned Pronaos column was derived from that of the peristyle, the upper diameter of the Pronaos column, as we have seen, gives the lower diameter of the Ionic column of the Naos. We thus obtain a normal columniation by measurement from the axis of the temple which cuts the central Corinthian column, to the centre which a column of the given diameter takes under the architrave of which we have obtained the position.

This columniation now governs the distribution of the flank columns, more or less exactly, and brings their centres upon lines which are opposite to intercolumns of the peristyle though not accurately centred by them. Indeed the columniation of the Naos is very nearly equal to that of the peristyle, and a consideration may arise,

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whether this was not the starting point of the whole distribution. It was determined, it may be said, that the columniation of the Naos should be nearly equal to that of the peristyle but on intermediate centres, columns ranging with intercolumns of the other system, and *vice versâ*. This being settled, the columns, we might proceed to argue, were necessarily advanced from the walls to such a distance that the two transverse columniations might be equalised with those of the sides of the apartment. The columns being placed, the breadth of the end architrave would thus be obtained, and from this the length is deducible by ratio 2 : 5, and lastly the height by taking the simplest proportional that the dimension at command admitted of.

Neither of these processes excluded the other, and either may have furnished hints by which the other was decided or modified; whichever we take, we shall be equally brought to the necessity of placing the first columns so close to the doorway as to make a dark corner that does not seem quite comfortable or satisfactory, but could not be avoided without vitiating the proportion of the apartment. The settlement of the diameter of the columns and their position on plan, furnishes the elements for finding their full height by rectangular symmetry; that is to say, by equalising their vertical dimension to a marked division of their spacing horizontally,—in point of fact, to the width of three bases and the two comprised intercolumns, the measurement being taken to the extreme of the fluted apophyge. The same extent equals the dimension from the external angle of one capital to the external angle of a third, or the sum of three abaci and two inter-abaci, if the word is allowable.

The difference between the shaft and the full height of the column is now divisible between capital and base; the remainder of the full height, after deducting column, is divisible between step and entablature, and the latter again has its special subdivision.

These subsidiary processes have already been followed out upon a previous page.

The plan of the Naos of the Theseum is a double square; that is, its length is to its breadth as 2 : 1. With respect to the height of that apartment, I have confidence that it was proportioned to the breadth as 5 : 4; but I must not incumber these pages by transferring to them the details of the argument.

The flank walls of the Naos proper have then on either side five engaged, or rather attached and advanced columns, forming as many niches on each side, and carrying an entablature which returns above the door at one end, and at the opposite end over a free Corinthian column—the same already alluded to, exactly opposite to the door.

These columns are again so far advanced from the side walls that their transverse interval is 14·50, while the length from the line of door to the Corinthian column gives a dimension which has ratio to this breadth as 5 : 2, whether taken on the plan or on the entablature.

From the plan it appears that the entablature should measure,—35·854 by 14·416.

The marbles in the Museum furnish the following measurements, which have some odd divarications, but fully confirm the proportion :

Frieze, west side, 36·1 ·5 = 36·125 (− ·271 = 35·854).
„ east side, 35·10·25 = 35·854.
„ south side, 14·4 ·5 = 14·375 (− ·230 = 14·145).
„ north side, 14·1 ·75 = 14·145.
5 : 2 : : 35·854 : 14·341 to compare with above measurement 14·375.
2 : 5 : : 14·375 : 35·935 ditto ditto 35·854.

Thus we find that, by a conspicuous application of the principle of repetition, the ratio 2 : 5 is repeated in plan of the whole temple on bottom step, in general Naos, and in Naos proper.

The columniation of the engaged columns is nearly equal to that of the peristyle, but in position, as we have seen, they alternate; the column of the Naos answering to intercolumn of the peristyle, and *vice versâ*; the probable motive of this arrangement, or at least a palpable advantage, was to allow the hypæthral opening to be

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symmetrical with the internal columniation, and also with the tiling, of which the spacing followed the divisions of the peristyle.

The breadth of the Pronaos being fixed by lines of walls, there is such a depth given to it as confers a ratio on plan of the internal apartment apparently of 2 : 3. The height again seems to have a ratio to depth of 5 : 3.

These proportions may be expressed equivalently as,—

6 depth : 9 breadth : 10 height.
2 depth : 3 breadth.
3 depth : ——— 5 height.

I may note here that the plan of the Posticum indicates the ratio of 4 : 9, and assuming the same internal height as the Pronaos we have,—

4 depth : 9 breadth : 10 height; and, as equivalent,
2 depth : ——— 5 height.

The recurrence of the ratio 2 : 5 being especially noteworthy.

It will be observed that the clear depth of the Pronaos is nearly equal to the transverse interval of Ionic interior of Naos.

The proportions of the interior of the portico of chief front I believe to be,—

3 height : 5 breadth.
1 depth : 3 breadth.

The depth of the porticoes, measured from edge of top step to the step of Pronaos and Posticum respectively, are remarkably near to equality, 16·82 and 16·862. By this limitation the transverse line of the cella step on either front is brought to range very nearly with the margins of third columns on flanks,—viz., 16·957, and at the same time the proper platform of the cella acquires very accurately the rectangular proportion of 3 : 10.

The cornice of the Pronaos is continued as a beam across the flank peristyles, and is returned along the back of the peristyle entablature as its proper interior cornice; seen from below it therefore formed in the portico a rectangular frame for the remarkably coffered ceiling. It is to this rectangle, judging by scale and compasses, that the ratio 1 : 3 applies, and again, by the same guidance, I find that the height of the ceiling from the pavement of the portico to the underside of the marble beams, is to the same breadth of transverse cornice as 3 : 5.

It will be observed that the ratios 1 : 3 and 3 : 5, are progressive in virtue of common difference between their terms of 2, and are also connected by the numerical identity of the term 3.

This combination of proportions is in interesting contrast to the sequence 1 : 2 : 3, applied in corresponding position in the Theseum and elsewhere, a progression with common difference of unity.

The scale annexed to the diagram (Plate II.) exhibits the series of leading proportions employed in the Temple at Bassæ.

These may be divided into two sets,—

First, ratios which show a greater approach to equality than 1 : 2; as three-fifths, two-thirds, &c.

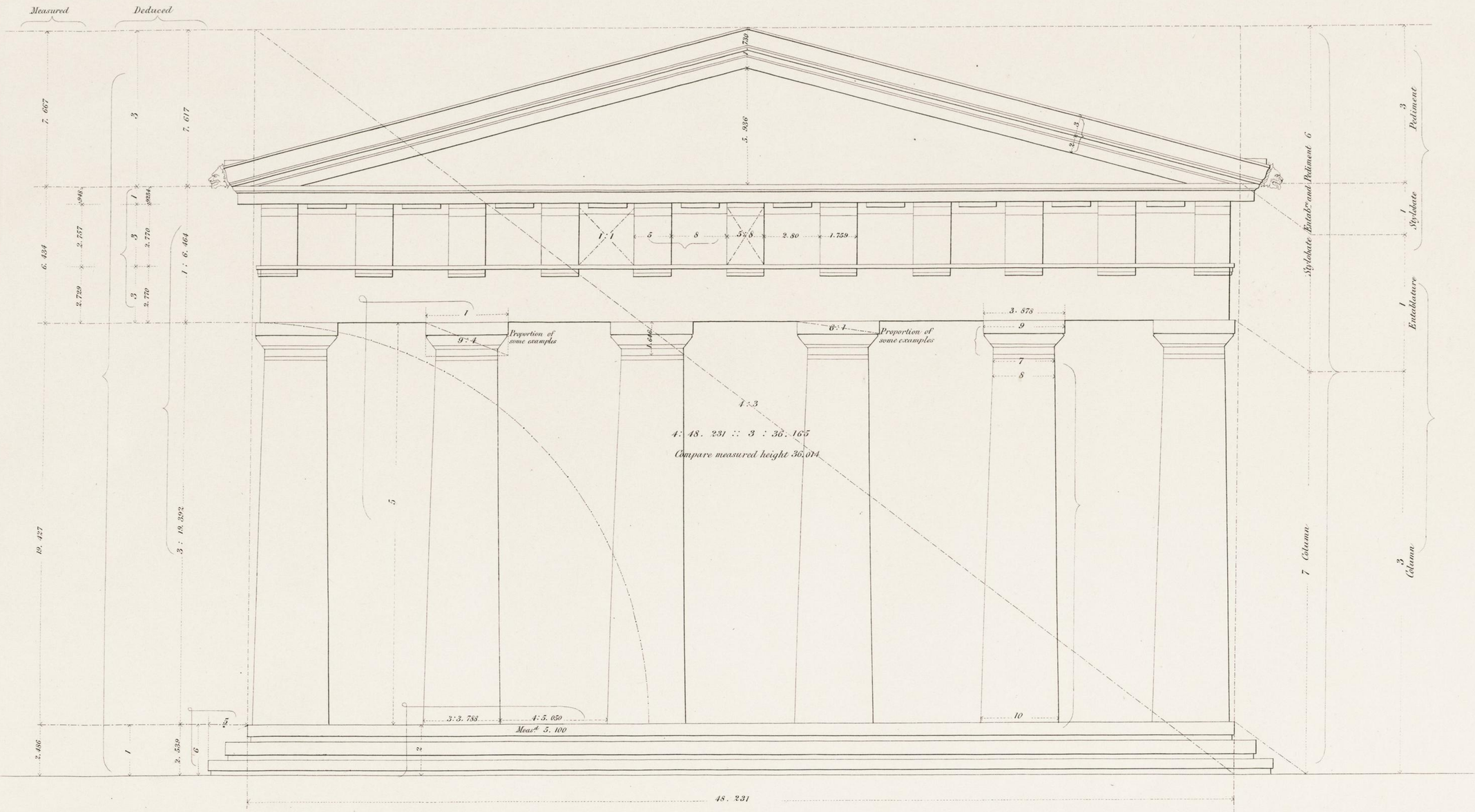
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Second, ratios which are more remote from equality than 1 : 2 ; as four-ninths, two-fifths, &c.

The latter class are most characteristic because most importantly employed, especially 1 : 3, in determining rectilinear proportions and 2 : 5 in rectangular ; important, however, as they are here, neither one nor the other of these ratios can be detected in a single application in the Parthenon, which has characteristic ratios of its own.

It is now time to pause ; much might still be added on the principles of the subdivision of members and mouldings, and on the proportions of the curved mouldings, which in this temple are very graceful, and have a unity of character that declares dependence on select and studied schemes of proportion. The subject is still therefore not exhausted, but we have already travelled so far along new ways that it is well to give rest and breathing time at once, while we may perhaps still venture to hope that neither have we absolutely exhausted the interest or the resolution of the student.

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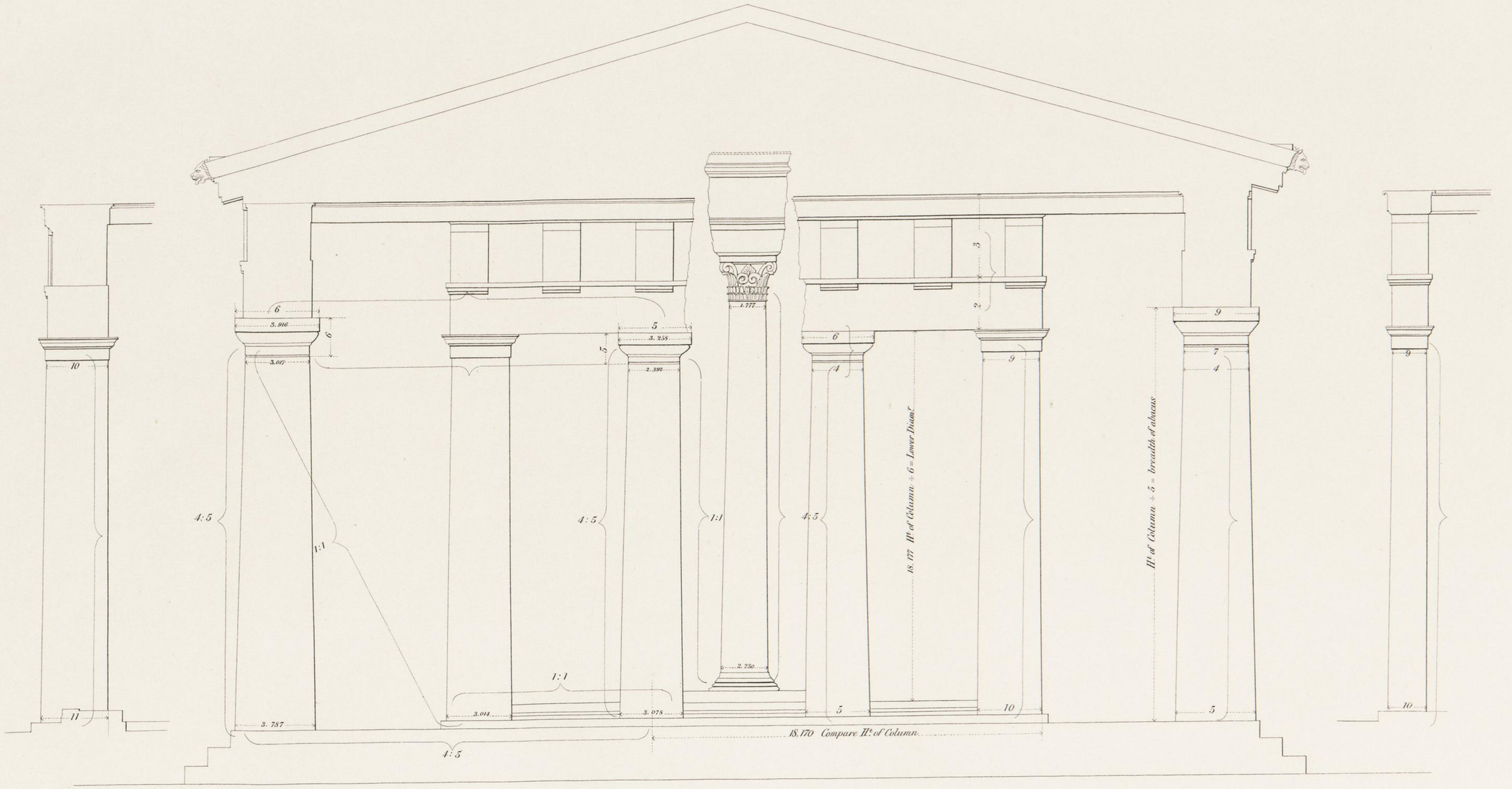


PROPORTIONS OF THE FRONT ELEVATION
OF THE
TEMPLE OF APOLLO AT PHIGALEIA.

W.W. Lloyd, invent.

Day & Son. Lith.rs to the Queen.

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SECTION OF TEMPLE AT PHIGALEIA

SHOWING THE SYSTEMATIC PROPORTIONS OF THE COLUMNS.

Scale of Proportions applied in the design of the Temple, in Plan and Elevation.

W. W. Lloyd, invent.

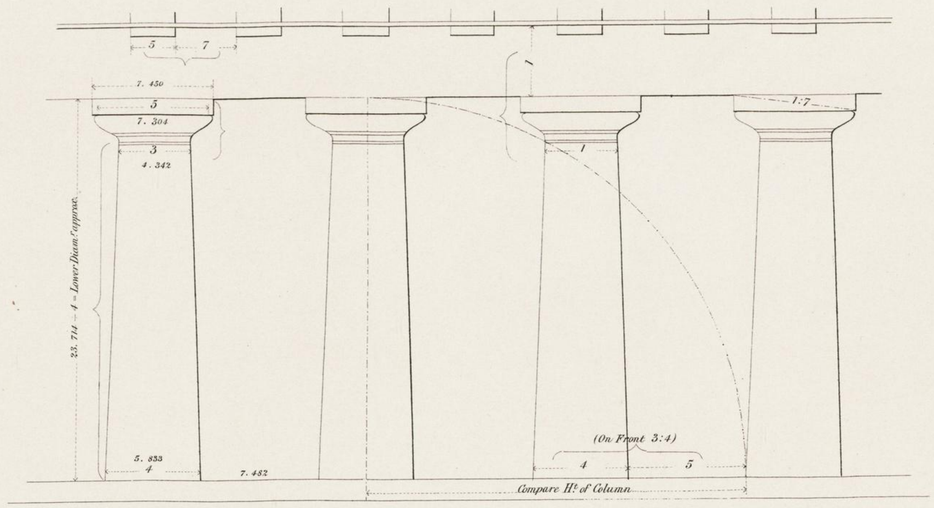
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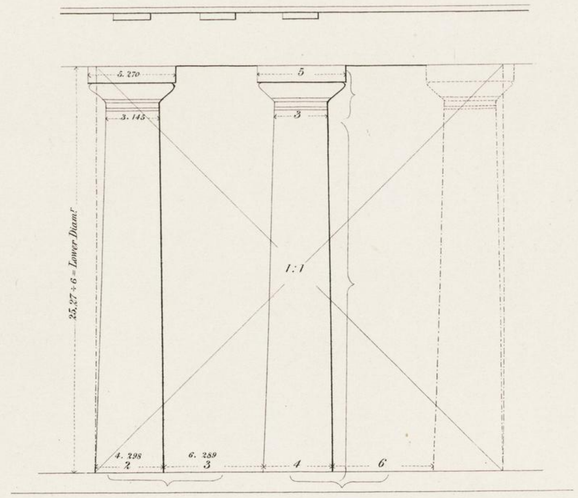
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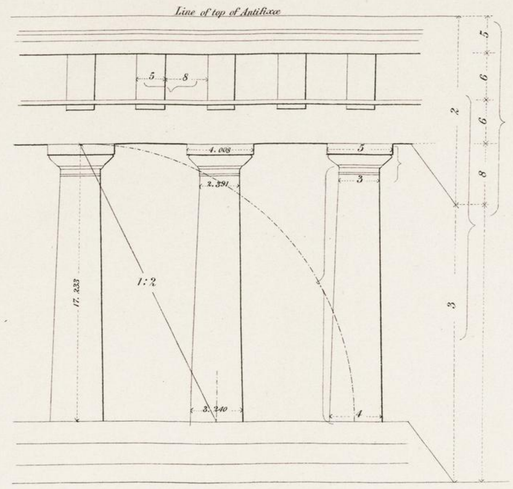
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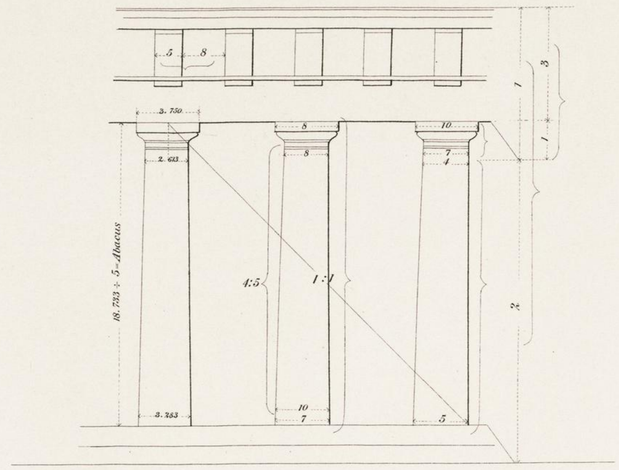
Nº 1.
TEMPLE AT CORINTH.



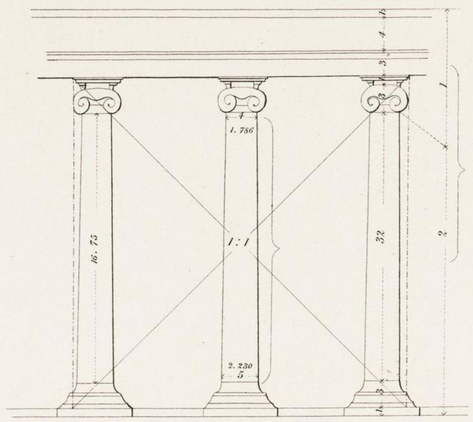
Nº 3.
TEMPLE BY THE PORT__ÆGINA.



Nº 2.
TEMPLE OF JUPITER__ÆGINA.



Nº 4.
TEMPLE OF THESEUM__(ORDER ON FLANK)



Nº 5.
IONIC ORDER OF THE NAOS__PHIGALEIA.

10 5 0 10 20 30 40 50 Ft.

W. W. Lloyd, invent.

Day & Son, Lith.rs to the Queen.

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THE TEMPLE OF JUPITER PAN-HELLENIUS; ÆGINA.

The full length of the temple on the lowest step is given as 98·635, which dimension divided by 2 gives 49·317 to compare with 49·592, the measured breadth. The plan of the temple on the lowest step therefore approaches a double square. To be exactly so it should have been ·590 longer, or ·275 less broad.

I entertain no doubt that the double square was the basis of the design, and that the difference is due to errors or to an adjustment; this view is confirmed when we find that the Naos also approaches on plan to a double square.

Length of Naos 42·875÷2=21·437 to compare with 21·291, the measured breadth.

Thus the Æginetan temple furnished a precedent which was not disdained by the architect of the temple at Bassæ, of making the plan of the Naos a similar figure to the general plan of the temple on the lowest step, in this case a double square; at Bassæ, a double square and a-half.

The plan of the Naos of the Theseum is also a double square, but the general plan has a different proportion —a double square and a-half.

The temple has six columns on the front, and on flank twelve; the angle columns being included in either reckoning.

A double number of columns gives a double number of intercolumns, plus one, viz., 5 and 11; and hence, if this number of columns were arranged around a double square, the flank intercolumns must be diminished by one-eleventh of the intercolumn of the front, to make up the extra one required. In the present instance the application of such a rule would produce a difference between the columniations of front and flank equal to almost half a foot in favour of those in front.

The architect therefore deducted from his double square the dimension required on fronts and flanks for the projection of his steps, and the deduction from the fronts being relatively greater, the front columniations contract, and are brought nearer to the average of those of the flanks. Even thus the difference remains in favour of the front, as 8·541 to 8·334.

The conclusion from such circumstances, in the case of temples of later date, would be with confidence, that the arrangement adopted would be found to conciliate some other important rectangular proportions; we are not entitled to assume this in the present earlier instance, and it may not be easy to prove it. The solution of such a problem is to be sought for in the comparisons of the height of the columns with the spacing (and that does not help us here), or else in the altered proportions of metopes to triglyphs, resulting from the close spacing.

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The openness of spacing designed for the columniation allows of the distribution of the front columns on a system which also rules in the Theseum. One quarter of the breadth of the top step is given at either end to two columns and the included intercolumn ; the remaining half of the step is occupied by the three intercolumns and two columns of the centre. This scheme gives a certain degree of contraction to the intercolumns by the angle, on which the columns, from their relatively small diameter, do not unduly encroach. The division, however, does not enable us to determine the exact columniation, which would be affected by a difference of diameter of columns.

The search for the principle on which the dimensions of the column of this temple are decided is rather baffling ; the breadth of the abacus does not prove commensurable here, as so often elsewhere, either with the height of the column, or the breadth of the upper step. It appears, however, to be very exactly one-eleventh of the front architrave. That is to say, breadth of abacus equals front architrave divided by the joint number of columns and intercolumns in front. In consequence of the projection of the abacus beyond angle of architrave, and the contraction of the angle columniations, the three central inter-abacal spaces exceed the width of the abacus, and those by the angles fall below it.

The same principle has a varied application in the Parthenon, where it is not the architrave, but the step that, divided by joint number of columns and intercolumns, gives the normal abacus.

The most exact commensurability that I can detect for the lower diameter of the column is that which appears by comparison of it with the length of top step on flank. Of this dimension it is very exactly the twenty-ninth part :

$$94{\cdot}033 \div 29 = 3{\cdot}242, \text{ to compare with measured } 3{\cdot}240.$$

On the front the diameter approximates, but much less satisfactorily, to one-fourteenth of the step, $44{\cdot}99 \div 14 = 3{\cdot}213$.

Comparing columns and intercolumns on plan, it may be said, therefore, in a general way, that on the flank the solids are to voids very exactly, as 12 : 17, and on the front approximately, as (6 : 8=) 12 : 16.

There is considerable difference between the columniations on flank, and no great value can attach to the selection of one that happens to offer a close proportion, 5 : 8 for example.

In point of fact, I believe that the upper diameter of the column and the lower diameter were derived from the breadth of the abacus by a very simple scheme of proportion, and that the three dimensions were designed to have the ratios of 5 : 4 : 3,—

Abacus . .	$4{\cdot}008 \div 5 = 0{\cdot}801$	$\times 3 = 2{\cdot}403$	Cf. Upper D. 2·391.
		$\times 4 = 3{\cdot}204$	Cf. Lower D. 3·240.

The differences between the measured and the calculated lower diameter is considerable, and I confess I cannot explain it. A parallel example, however, to be presently adduced, justifies—nay, constrains—my ascribing it to an error.

I cannot trace any proportion of low numbers between these dimensions or their means and the height of the column, that has any plausibility to protect it ; neither do the squares of these numbers compare in any exact and simple ratio, and the principle of proportioning columns by ratios of sectional areas is not, therefore, traceable here.

We now assume that the diameter of the column has been determined, and the pairs of columns nearest to the angles of the front may be placed agreeably to the distribution of the top step, already noticed ; namely, the second column at either end is moved up just to the point which marks off a quarter of the breadth of the front, whether inclusive or exclusive of the margin and step at angle. If we now divide the space intervening from centre of one of these columns to that of the other by three, we obtain the average length of the three central architrave stones, adjustments apart, and therefore the lines of centres of the two central columns.

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In other words,—

The semi-breadth of front . . .	22·495
Plus two semi-diameters of columns . .	3·240
	3)25·735
Gives for central columniations . . .	8·578, to compare

with 8·541, as shown on the Plate.

From the columniation thus gained is derived the height of the column, which is made nearly equal to this dimension × 2. Thus measured height 17·233÷2=8·616 ; and, in consequence, the symmetry results of equality of height of column to the breadth on plan from the centre of an ordinary column to the centre of a third beyond. It is manifest that if this ratio of height of column to columniation were first decided on, columniation might be derived from division of the architrave, and the diameter of the column be left free for future determination by derivation from the height of column thus obtained independently.

Before proceeding further, I adduce the examples which makes me satisfied to accept the approximate solution of the proportion of the column.

The pair of columns that remain by the Port of Ægina are ruins of a temple larger than that of Jupiter Panhellenius, and probably of later date. It is remarkable how nearly they agree with the rule that we have obtained a glimpse of, in having upper and lower diameter of shaft, and diameter of echinus, proportioned as 3, 4, and 5,—

Upper diameter of shaft	3·145 ÷ 3 = 1·048.
Lower diameter of shaft	4·298 ÷ 4 = 1·074.
Diameter of echinus	5·270 ÷ 5 = 1·054.

The greatest divarication is in the lower diameter, the part most exposed to injury, and of which the measurement may therefore be least to be relied on ; apart from this consideration, the difference would be considerable. In these instances, therefore, upper diameter is exceeded by lower, and lower diameter by that of the echinus by the same absolute dimension ; or we may say, there is twice the absolute difference between top of shaft and echinus that there is between foot of shaft and echinus. The lower diameter, that is deducible from the echinus by ratio 5 : 4, is 4·216, and this is very exactly one-sixth of the height of the column :

Height of column	25·27 ÷ 6 = 4·211.

Again, this calculated diameter would bring out a ratio to intercolumn of 2 : 3 with great exactness.

Columniation	10·500
Diameter of column	4·211 ÷ 2 = 2·105.
Intercolumn	6·289 ÷ 3 = 2·0967.

On comparing the columniation with the height of the column, it appears that this height would, as nearly as may be, equal the dimension on plan comprising two columniations plus two semi-diameters ; in other words, three diameters, and the two included intercolumns.

10·50 × 2 = 21·0 + 4·211 = 25·211, to compare with 25·27 ;
or, taking the diameter as 4·298 = 25·298, „ „

This is the form of symmetry of height, with plan of columns, that was adopted in the Parthenon.

It seems certain, however, from the dimensions of the stylobate, that the Æginetan colums were those of a Pronaos ; and if the temple was hexastyle, no third column would be grouped with them, being distyle in antis, and the value of the symmetry in this form would fail ; it was, however, probably saved, as was the case at Bassæ, by comprising an anta.

Guided by experience derived from study of temples of the perfected style, we now compare the height of

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the column of Jupiter Panhellenius with the complementary height of the front, but instead of exceeding half the full height, as in those instances, it falls below it, and the result is a certain heaviness of effect, which the later improvement admirably countervailed.

On one front at least a height was given to the acroterial ornament, which seems to have made up, with pediment and entablature, a joint height just equal to the height of the column.

On the flank of the temple, however, where the pediment is no element in the comparison, the importance of the column asserts itself, and here a proportion is discovered which, whether fortuitous or not, must have been happy in effect. The height of the column, in fact, compares with the joint height of stylobate and entablature, including antefixæ, in the ratio 3 : 2,—

Height of column . . . . 17·233 ÷ 3 = 5·744 × 2 = 11·488.
Height of steps, 3·689 + height of entablature with antefix. 7·838 = 11·527.

This is an agreement quite as close as the nature of the measurements allows us to expect.

I have grave doubts, however, whether it is due to a comparison taken by the architect in this broad way. At any rate, he had not learned to pursue the principle with the logical consistency in vogue with his successors; for the joint height, which is one term in the comparison, will not sub-divide by any intelligible scheme of proportion. No more simple proportion between heights of stylobate and of entablature is obtainable than 8 : 17, which in later practice would have been held of no account.

By the same practice it would have been held scarcely admissible to combine architrave and stylobate in a simpler proportion than links architrave to entablature, or entablature at large to stylobate: but here we find, on comparison, that architrave and stylobate are proportioned very exactly by the ratio 3 : 4,—

Height of stylobate, 3·689 ÷ 4 = 0·922 × 3 = 2·766, to compare with architrave as measured, 2·764.

The frieze, being taken as equal to the architrave, falls into a like comparison.

The cornice on flank, with its antefixæ, appears to be proportioned to frieze as 5 : 6,—

Height of frieze, 2·764 ÷ 6 = 0·4606 × 5 = 2·303, to compare with 2·330, apparent dimension, subject to correction.

On the front the height of the cornice is rather less, from absence of the fillet of the cymatium; it here has a height equal to about half the breadth of the metope.

These proportions are most conveniently exhibited by reduction to a common denominator and tabulation in such a form as the following:—

							Measured
50	Flank cornice	10	5		2		2·330 ÷ 10 = ·2330.
	Frieze	12	6	3			2·764 ÷ 12 = ·2303.
	Architrave	12	6	3			2·764 ÷ 12 = ·2303.
	Stylobate	16	8	4			3·689 ÷ 16 = ·2305.
75	Column	75			3		17·233 ÷ 75 = ·2295.
125		125					

There is now a temptation to seek in the height of the pediment an addition that would raise the total of primary aliquot parts to 200, viz., 25; but the closest approximation gives 27, and thus the comparison is disappointed.

There is more analogy between the process of distribution traced here and that employed at Bassæ, than between either of these and the perfected system as employed and discoverable in the Parthenon. Inventive ingenuity is displayed in all the examples, and sometimes dignity predominates, and sometimes grace; but it is at Athens alone, it is on the Acropolis, that both qualities consent in perfect union, and architectural elements combine with the harmonious flow of the poetry of Sophocles, and with a coherence and cogency that are truly Demosthenic.

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The height of the triglyph is to its breadth as 5 : 3,—

5 : 2·760 : : 3 : 1·656, to compare with measured breadth 1·645, which approximates also to half the lower diameter of the column, 3·334 ÷ 2 = 1·667.

The breadth of the triglyph is to that of the metope as 5 : 8 ; thus,—

8 : 2·593 : : 5 : 1·620 (measured 1·645).

The inaccuracy of the numerical result is here something considerable, but does not vitiate the fundamental proportion, as the spacing of the triglyphs was systematically irregular, and the breadth of metope varied accordingly.

The metope becomes by these arrangements nearly square : if we assume that the height of the frieze was first fixed, the assignment of a nearly equal breadth to the metope would bring out the breadth of triglyph as a remainder that might be reduced to proportion by trifling addition or diminution.

On the other hand it is open to assume that the span of the architrave stone as determined by columniation, was distributed for metope and triglyph in the first instance by definite proportion of breadths. The breadth of metope thus obtained would give approximate height for frieze and architrave, and from these a height is obtainable for the cornice by option of proportion.

As regards a grand rectilinear proportion for the front, the ratio 4 : 5 has the best claim to be considered ; but, under the existing numerical conditions of the problem, I am not disposed to press the comparison.

The line of the inner face of the anta of the Pronaos, and consequently the general line of the interior of wall of cella, is thus regulated ; the dimension, including the breadth of anta, interval of ambulatory, and diameter of column of flank peristyle, is made just equal to the dimension comprising a pair of diameters of the peristyle and their intercolumn.

The breadth of the anta being about 1-8th less than the diameter of the column, this difference goes to enhance the interval between anta and column, as compared with intercolumn :

Diameter of column 3·24 ÷ 8 = 0·405 × 7 = 2·835 Cf. anta measured 2·823.

The very same principle, as we have seen, is employed in setting out the position of the cella wall of the Parthenon and at Bassæ.

The breadth of the anta decides approximately that of the cella wall.

I have already noticed that the plan of the Naos is a double square ; that of the Pronaos has the same proportions, but on a transverse axis ; that is to say, the width of Pronaos and Naos being the same, the depth of the Pronaos is taken as half that width, and the depth of the Naos as double. There is a somewhat similar interchange of proportions between Naos and Pronaos in the Theseum.

It will further be found that the depth of the interior of the Pronaos is made just equal to the breadth of the nave or central avenue of the Naos between the columns ; in other words, the breadth of the Naos being divided by four, two parts are given to the nave, and one part is assigned on either side of the plan to the columns, and, as we may call them, the aisles.

The height of the interior of the Pronaos was apparently made just equal to its breadth.

We have yet to determine how far to the east the cella wall and antæ shall extend ; correspondence with the peristyle gives none but the most indefinite solution of the problem, as it does not apply either to centre or margin of a column. In point of fact, the line of the top step of the cella is brought so far forward towards the front step of the temple, that the interval is just equal to the depth of the Pronaos interior, or, which is the same

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thing, to the semi-breadth of the Naos, which agrees with the width of its central avenue. The line of the architrave of the peristyle is ruled through for that of the Pronaos, and the Pronaos column is therefore only diminished in height by the height of its steps, or little more than the thickness of the peristyle abacus.

It may seem scarcely advisable to insist on a detailed comparison of the proportions of the columns in the absence of minute measurements, made in anticipation of an analysis of the highest exactness, and that at every step we should be liable to the double misfortune of being misled by seeming coincidences, and of rejecting proportions out of conscientious deference to inexactitudes equally fallacious.

I venture nevertheless on the indication of traces of system that are supported by agreement of measurements within plausible limits, and by a degree of proportional consistency that seems impossible to be due merely to accident.

Such appear to be the relations of interdependence between the Pronaos column, lower Naos column, and upper Naos column exhibited in the following table, referred to as A, B, and C; the underlined dimensions are the calculated, the others the measured.

	A. Pronaos.	B. Naos.	C. Upper Naos.
Height of shafts	5 : 14·618	:: 4 : 11·692 / Cf. 11·716	:: 2 : 5·846 / Cf. 5·878
Height of capitals	5 : 2·016	:: 4 : 1·612 / Cf. 1·590	:: 3 : 1·209 / Cf. 1·192
Lower diameters of shafts	4 : 3·145	:: 3 : 2·358 / Cf. 2·347	
Ditto		4 : 2·347	:: 3 : 1·760 / Cf. 1·760
Lower diameters : Upper do.	4 : 3·145 :: 3 : 2·358 / Cf. 2·284	4 : 2·347 :: 3 : 1·760 / Cf. 1·740	4 : 1·760 :: 3 : 1·320 / Cf. 1·312
Diameter of echinus		5 : 3·016	:: 4 : 2·412
Ditto	5 : 3·770 / Cf. abacus 3·916	:: 4 : 3·016	Cf. 2·415
Breadth of abacus : Height of do.	6 : 3·916 :: 1 : 0·652 / Cf. 0·654	6 : 3·062 :: 1 : 0·510 / Cf. 0·510	6 : 2·415 :: 1 : 0·402 (?) / Cf. 0·423 (?)

The heights of the shafts of these columns are thus to each other respectively as 5 : 4 : 2.

That is to say, A exceeds B by one-quarter, and B exceeds C in height by one-half. Assuming the height of the Pronaos shaft to be given, and the clear interior height of the Naos limited, the problem arose to distribute the latter dimension among columns, upper and lower, and their epistylia appropriately and agreeably, and we can see enough to convince us that it was held essential to success to effect the distribution by a scheme of proportion. All the conditions of the problem not being forthcoming, we must decline an attempt to trace the process of solution, and be content with glimpses of the result.

The height of the lower Naos column exceeds slightly the transverse columniation of the Naos, or the span from centre to centre of columns on opposite sides (13·40 : 13·00), and it seems also to have been about half the full height of the interior; the height from pavement to top of the upper architrave, which had members above it, being 24·09.

The height of the capital B bears to that of A the same proportion as its height of shaft—viz., 4 : 5, but the

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height of the capital of C, compared with that of B, bears to it the ratio of 3 : 4, instead of only 1 : 2, which it should have to correspond with the relative height of the shafts.

The lower diameter of A is to its upper diameter as 4 : 3, and the same proportion obtains between the lower and upper diameters of B and C respectively ; moreover, the upper diameter of A equals the lower of B, and the upper of B the lower of C. Each shaft, therefore, has the same proportionate difference between upper and lower diameter, and the upper diameter of one shaft equals the lower of the next in order. If the height of the shafts agreed in proportion likewise, they would be all similar in figure, and might be considered as consecutive segments of the same truncated cone ; this, however, is not the case, and the agreement that we have traced was tempered by very decided contrasts, first, in the proportionate height of the shafts, and then, as we have seen, in the variable proportions of the capitals.

In these mingled agreements and differences the Æginetan Temple furnished, or at least illustrates, a precedent which was followed at Phigaleia.

The diameter of the Naos column is three-quarters of those of the Pronaos, but the height of its shaft exceeds three-quarters, and is as much as four-fifths of the height of the Pronaos shaft ; it is therefore loftier in proportion and consequently its diminution is less quick.

On the other hand, the shaft of the upper column, which has its diameter proportioned to those of the lower, as 3 : 4, is only equal to half its height instead of three-quarters, and the smaller column in this case has a much more sudden dimunition.

The smaller columns have a spread of abacus or echinus greater proportionately than would be deduced from the relative heights of their shafts, namely, four-fifths instead of three-fourths, and the abacus of the upper column of the Naos, being derived from the already enhanced abacus of the lower columns, obtains thus a double increment.

In the instances A and B the height of capital compares with breadth of abacus only approximately, in the ratio 1 : 2.

The great economy of ratios with which such variety of effect is obtained, is very remarkable, and denotes an appreciation at this time of one of the most important principles of proportional harmony.

There is great interest in the comparison of the Temple of Jupiter Panhellenius at Ægina with the grand remains of the Doric temple at Corinth,—the only temple of Greece Proper of which we have any considerable architectural record, that can be regarded as of the same standing in antiquity and style. It has appeared convenient to reserve this comparison for a few separate paragraphs, from the variety of inquiries it involves respecting the restoration of the ruin.

Scanty as the Corinthian remains are, they enable us to say that the architect here, as at Ægina, at least avoided the Sicilian practice of making the height of the entablature exceed the breadth of the shortest columniation. On the other hand, it is pretty clear that no more here than at Ægina had he yet divined the advantage of giving an excess above half the full height of the front, to the column—the interval of entablature and stylobate.

As compared with later examples both temples agree in an exaggerated difference between the lower diameter of the column and the echinus, in favour of the latter, and in an exaggerated contraction of diameter at top of the shaft. At Bassæ, as we have seen, these differences are at their minimum. Another point of archaism common to both is the subordination of the height of the abacus to that of the echinus ; but the curve of the echinus, which at Corinth is parabolic, if not elliptical, at Ægina already assumes the severer type of the hyperbola of the most refined examples.

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At Corinth, again, the breadth of the abacus in every case exceeds that of the inter-abacal space, and thus is out of harmony with the relation of guttæ plates and intervals, or triglyphs and metopes above, and the diameters and intercolumns below. At Ægina the abacus is only allowed the superiority relatively to the contracted columniations by the angle.

Thus much for the general relations of these two venerable structures; their dependence on common principles and practice will find abundant illustration as we proceed.

There can be no doubt that the temple at Corinth was hexastyle, and the measurements we possess enable us to recover pretty accurately the breadth of the top step :

5·833 × 3 = 17·499 = 3 diameters of column.
7·312 = intercolumn by angle.
7·688 = second intercolumn.
3·974 = semi-intercolumn of centre.

Semi-breadth of front 36·473 × 2 = 72·946 for breadth of front.

The breadth of the abacus, 7·450, is so nearly 1-10th of this dimension, that I do not hesitate to adopt 74·50 as the corrected breadth of the top step from angle to angle. In the hexastyle Theseum the abacus is reduced to 1-12th of the top step, and at Ægina we have seen reason to refer it to the somewhat shorter architrave as 1-11th.

It is quite within the limits of variation that the Corinthian example measured not the step but the architrave, but I rest as above.

Thus results the excess of breadth of abacus over inter-abacal space already referred to, and so common in the Doric architecture of Western Greece.

The breadth of abacus limits the full diameter of the echinus, and from this is derived, as at Ægina, the lower and upper diameters of the column, and by exactly the same ratios, viz., 5 : 4 : 3. There is, however, one diversity in a primary application of them. The leading dimension is taken not from the full breadth of the abacus, but from the diameter of the echinus on its upper surface, where it diminishes by the return of the parabolic curve :

Diameter of echinus at top . . . . 7·304 ÷ 5 = 1·4608 { × 4 = 5·8432 / × 3 = 4·3824,

to compare with measured lower diameter 5·833, and upper 4·342.

The error for the upper diameter (0·040) is certainly very considerable, but under all the circumstances I feel assured that it must lie at other door than that of the proportional rule assumed. The lower diameter comes out exactly as measured.

My only doubt is whether we should not boldly take the full breadth of the abacus as our base and deduce the diameters from it, ascribing variations to diversities of examples or lapse in measurement :

7·450 ÷ 5 = 1·49 × 4 = 5·960, to compare with 5·833.
× 3 = 4·470, to compare with 4·342.

Stuart's errors in the diameters of the Parthenon columns are so considerable as to justify this hesitation.

The diameter brought out thus is so nearly 1-4th the height of the column that we are yet again tempted to try what results are obtainable by making this height the basis of proportion :

Height of column, 23·714 ÷ 4 = 5·928, for lower diameter of column. Cf. 5·833.
5·928 ÷ 4 = 1·482 × 5 = 7·410, to compare with 7·450 echinus.
× 3 = 4·446, to compare with 4·342 upper diameter.

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As we have seen, the lower diameter does not measure the height of the peristyle column either at Ægina, the Theseum, or Bassæ.

The height of the abacus is just 1-7th of its width; in many later examples, in the Pronaos at Ægina, in some of the capitals of Bassæ, and in the normal of the peristyle of the Parthenon, the favourite proportion is 1 : 6. The Corinthian example, therefore, is relatively flatter as well as wider.

The required rectangular symmetry of the columns on the front is gained by giving them a height equal to the dimension from the axis of the column to the nearest margin of the third beyond. According to the plates, which are without figured dimensions, the same symmetry applies to the ordinary columniations of the flank, and as no contracted intercolumn is concerned here, it follows that, as at Ægina, the ordinary spacing of the flank columns was closer than on the fronts.

According to this rule, the ordinary flank columniation would be about 7·482. As thus:

Height of column 23·714 less $1\frac{1}{2}$ diameter of column 8·749 = 14·965 ÷ 2 = 7·482.

We have now the elements for a fair conjecture that the temple, like that at Ægina, was set out on plan by a double square, and, like that, had twelve columns on flank:

Diameter of column, 5·833 × 12	69·996
Pair of intercolumns by the angle, as given on Plate, 6·645 + 7·208 = ...	13·853
The same for the other end	13·853
Ordinary intercolumn of flank, as deduced, 7·482 × 7 to complete 11 = ...	52·374
	150·076
Add, for joint width of two steps at either end	4·000
Conjectural length of temple on lowest step	154·076

154·076 ÷ 2 = 77·038, for width of front measured on lowest step,
to compare with width of top step, as obtained; viz.

72·946 + 4·000, for width of steps as above = 76·946; agreement, which
may be taken as absolute.

These conjectural dimensions have the same approximation to a simple ratio to the Hecatompedon, that we have observed in the breadth and length of the Æginetan temple; the exact limitation again evades us.

Arguing from the dimensions and spacing of the guttæ tablets, the triglyph was proportioned to the metope in breadth, as 5 : 7, or a degree nearer to equality than the proportion 5 : 8, which obtains at Ægina.

We are further quite safe in assuming that the height of the frieze was nearly equal to that of the architrave, and if we were treating of remains of a later date, we should have the means now of restoring several other main proportions. It is, however, high time to stop, for in the period during which the artist was feeling after the beautiful, and approaching to the theory of essential propriety, it is manifest that he struck sometimes beside the mark that at last was so happily attained, but not attained till afterwards. If, therefore, we are to track him without aid of full records, it must also be without the guidance of those principles, which, when we have once obtained a glimpse of, it is neither agreeable nor advantageous to have to struggle to forget, though only provisionally.

Here, then, I bring to a conclusion the observations on the proportions of the Doric Temples, for the exposition of which an opportunity has been so liberally afforded me. I have been allowed to aim my shafts, like another Teucer, from the shelter of the ample shield of the Æacid hero. I can only hope that enough of my shots have told, to compensate for those that have overshot, or swerved, or fallen short.

One word remains to be said in palliation of the latter, or of the inevitable incompleteness of my memoir, whether as expository of a theory of architectural proportion or of its application. The subject could not have been taken up at all but for the guidance derived from the materials for study provided in the detailed publication

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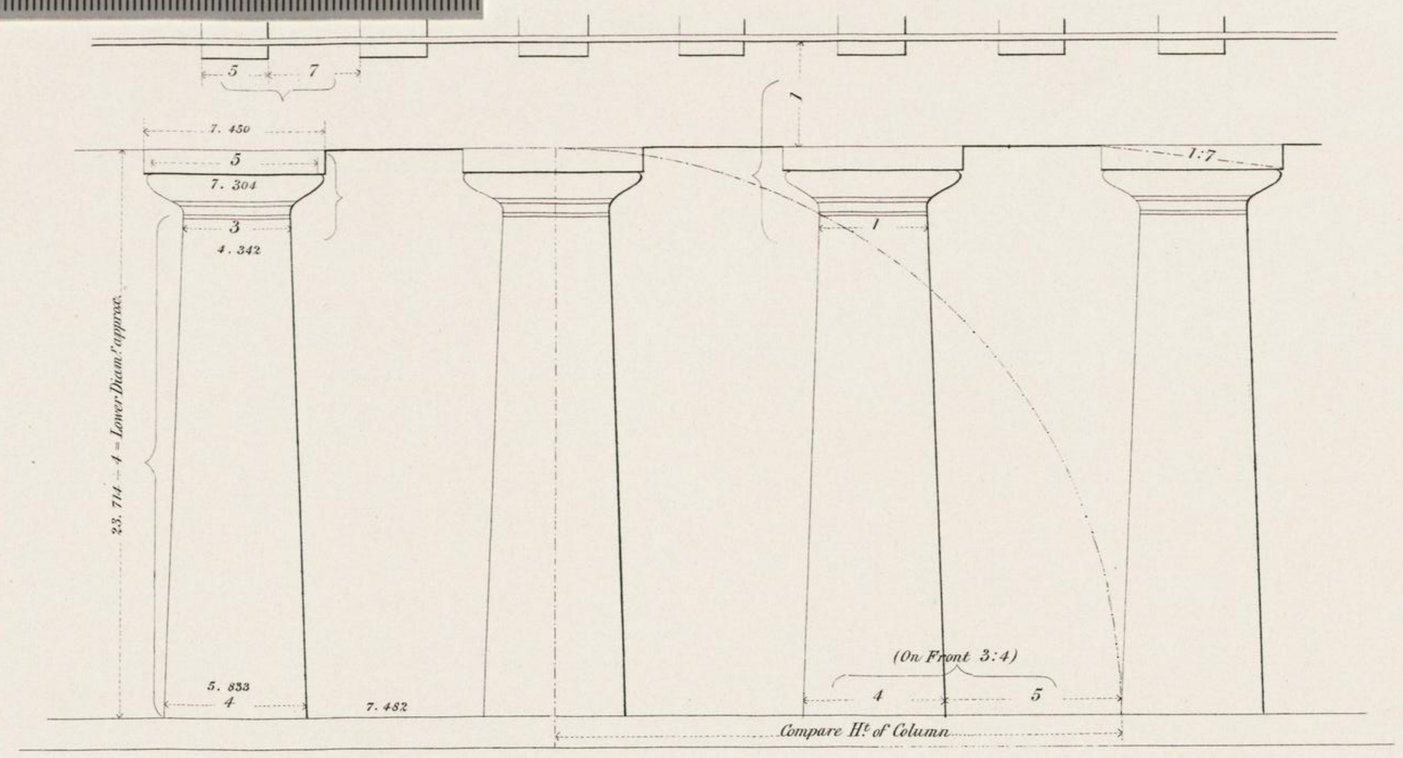
of the Parthenon by the Dilettanti Society. Again it can only be in connection with the great Athenian master-work that the perfected system of architectural proportion, as employed by the first Greek artist, can be fully set forth even to the extent that it has appeared recoverable ; the exposition of this therefore, and its vindication by collation with natural principles and independent theory must await the precarious providence of a distinct treatise on a special basis. I recently indicated some brief general outlines of results in a paper read in the rooms of the Institute of British Architects, which will be found again abbreviated in their Transactions, and here the subject at present remains. Meantime it will perhaps be thought that the adumbrations of proportional system, plan, and process, in the examples we have gone over of Phigaleia and Ægina are so far not without interest, though I make it a conscience to record my sense of how much by necessity remains unattempted here.

I have endeavoured in these notes to indicate from time to time the points on which we still desiderate more exact testimony from the monuments ; I would say further that the best service that remains to be rendered to Greek Architecture after the records contained in the plates of the present volume are before the world, will be the measurement and publication of the hitherto wonderfully preserved Theseum, with the same full and scrupulous detail that Mr. Penrose bestowed so happily on the Parthenon. When this shall be done, the world will have acquitted its responsibility for placing beyond the risks of wars and revolutions the means of some day fully recovering and setting forth those principles of Eternal Truth and Beauty that the genius of the Greeks embodied in their Doric Architecture.

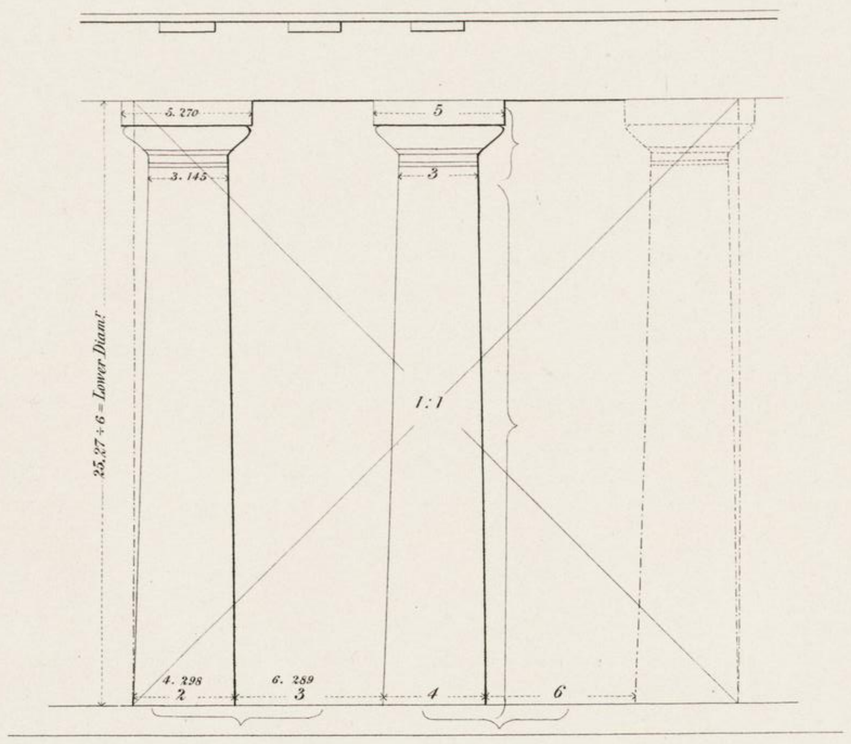
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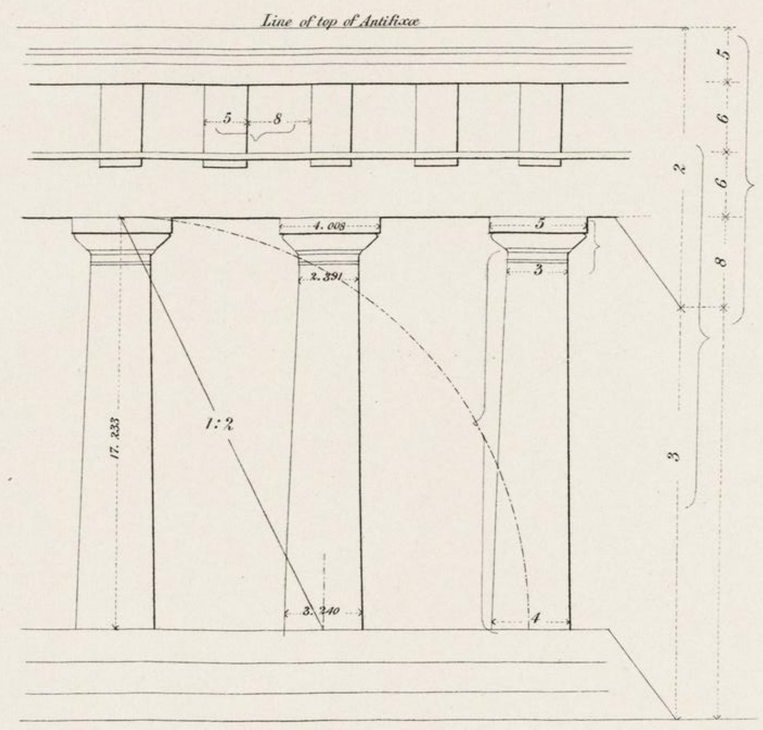
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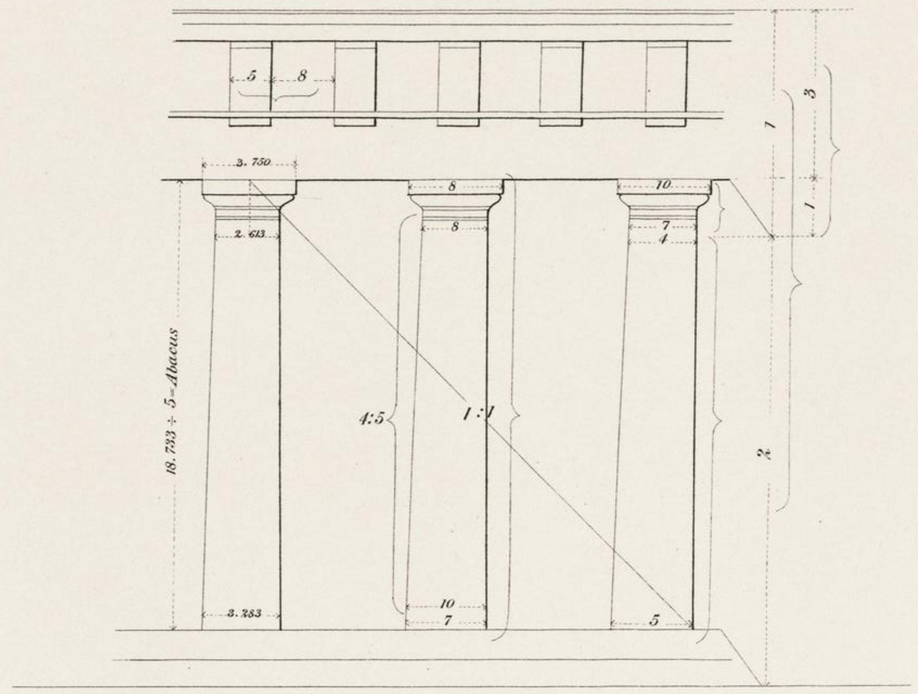
Nº 1.
TEMPLE AT CORINTH.



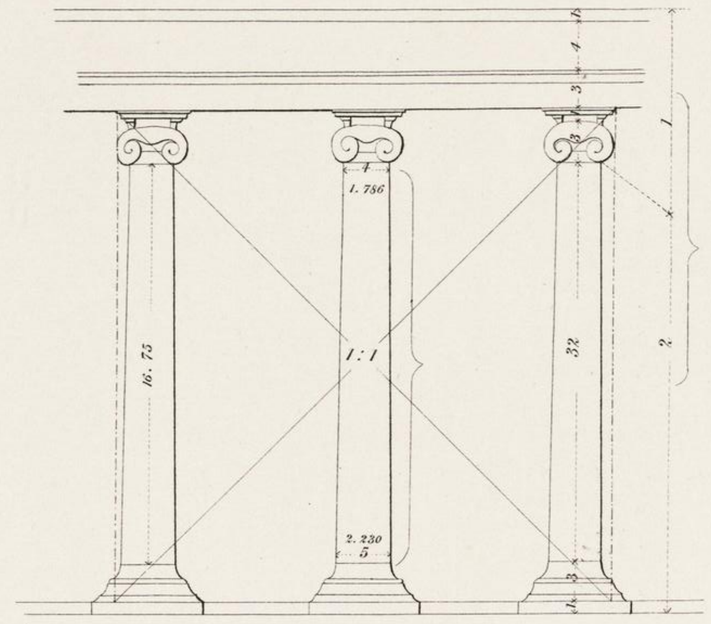
Nº 3.
TEMPLE BY THE PORT__ ÆGINA.



Nº 2.
TEMPLE OF JUPITER__ ÆGINA.



Nº 4.
TEMPLE OF THESEUM__(ORDER ON FLANK)



Nº 5.
IONIC ORDER OF THE NAOS__ PHIGALEIA.

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